



Who lives there now? Residualisation of social housing in Austria

Stefan Angel¹ · Alexis Mundt²

Received: 3 May 2023 / Accepted: 7 January 2024
© The Author(s) 2024

Abstract

Across Europe, there is a trend to re-focus social housing on the most economically vulnerable groups (“residualisation”). We investigate whether this trend is also observed in Austria, a conservative welfare state with a social housing system open to a broad range of households and a long tradition of municipal housing. Using data from 1995 to 2018, we estimate residualisation indicators that compare the income of social housing tenants with other housing sectors. Based on tenants’ income, we find that municipal housing has become more residualised. This contrasts with Austria’s social housing allocation policy, where generous income limits remain important cornerstones. For limited-profit housing associations (LPHAs), we observe a smaller residualisation trend (mainly outside the capital Vienna), which has gained momentum since the early 2010s. This remedies the Austrian peculiarity that the LPHA sector was a middle-income tenure rather than a safety net for the poor. For both types of social housing, a growing income gap with owners is noticeable.

Keywords Residualisation · Social housing · Austria · Income · Assetisation · Socio-tenurial polarisation

1 Introduction

In the housing literature, residualisation refers to the process whereby publicly subsidised rental housing moves towards a position in which it primarily serves as safety net for poor or low-income households (Malpass & Murie, 1982; Norris & Murray, 2004). Various scholars argue that a trend towards refocusing social housing on the most economically vulnerable social groups can be observed in Europe over the last decades (e.g., Scanlon et al., 2014).

✉ Stefan Angel
Stefan.angel@wifo.ac.at

Alexis Mundt
mundt@iibw.at

¹ Austrian Institute of Economic Research, Arsenal, Objekt 20, 1030 Vienna, Austria

² Institute for Real Estate Construction and Housing, Vienna, Austria

In contrast to many countries, Austria is in the rare position where continuous support for social housing has led to a growing sector over time (Mundt, 2018; Kössl & Gutheil-Knopp-Kirchwald, 2021; Housing Europe, 2023). Austria is often mentioned as a policy role model for affordable social housing, characterised by high construction quality, a balanced mix of tenants and innovative financing to ensure long-term housing access for large parts of the population, not only the most vulnerable groups (Deutsch & Lawson, 2012; Amann et al., 2012; OECD, 2020; NYT, 2023). Special recognition is given to the “Vienna model” of social housing (Förster and Menking, 2016; Hernández-Morales, 2022), where a large municipal housing stock is complemented by a steady growth in the rental stock of Limited-Profit Housing Associations’ (LPHA), which operate on a subsidised cost-rent basis.

However, while the Austrian case study seems to be of particular interest from an international perspective, there are no recent in-depth studies on whether Austria is following the same trends in residualisation as other countries, and what new challenges may arise from such developments. Only a few papers deal with the residualisation of social housing in Austria. The most recent work is Angel (2023) who finds that Austria has one of the lowest levels of social housing residualisation in Europe. However, Angel (2023) does not distinguish between the municipal sector and the LPHA sector and covers a much shorter observation period than this paper. In addition, the author does not take into account regional differences, tenure switchers and excludes a detailed discussion of the evolution of eligibility rules. Mundt and Amann (2010) and Mundt (2018) show that the LPHA rental sector is much less residualised than the municipal rental sector, partly due to higher rents down payment requirements for tenants (Sect. 3). Nevertheless, the share of low-income households in the LPHA rental and the private rental housing stock has increased substantially between 2010 and 2016. Mundt and Amann (2010) and Mundt (2018), however, do not sufficiently address current trends in the social housing subsectors in Austria, where LPHAs, are gaining share and the traditional municipal housing sector is facing a strong decline in new construction. Also missing is the question of how other tenure types, especially homeownership, are reciprocating the development of social housing and whether a general ‘socio-tenurial polarisation’ (Tunstall, 2021) is taking place. Finally, Deutsch (2009) estimates that low-skilled households and the unemployed are more likely than average to live in social housing. In contrast, the effect of income is negligible. Deutsch (2009) also finds a steady flow of higher-skilled and more affluent younger social renters into ownership. However, this study only covers an observation period up to 2003 and therefore cannot reflect the most recent trends observed in Europe.

Three recent papers focus on the development of the housing market and the role of social housing in Vienna. Kadi (2015) argues that after a history of increasing decommodification, municipal housing in Vienna has been re-commodified in recent decades, as the municipality has stopped building on its own and the remaining municipal housing stock does not provide housing options in line with increasing housing demand. Gutheil-Knopp-Kirchwald and Kadi (2017) find that between 2004 and 2011 the strongest tenure changes can be observed in the highest and lowest income quartiles, with a shift from private rental to homeownership for the first and to municipal housing for the latter. Nevertheless, the authors argue that the rental markets in Vienna can still be characterised as integrated in Kemeny’s (2006) sense. Similarly, Friesenecker and Kazepov (2021) conclude that the educational and occupational profiles of social housing tenants in Vienna are still very mixed. However, their analysis does not examine the income profiles of tenants in detail.

In this paper, we contribute to the literature on social housing residualisation by investigating Austria in detail for the period 1995 to 2018, as a country with a growing social

housing sector characterised by a two-pillar system with a shift in focus from municipal to LPHA housing, particularly in Vienna. As a first step, we examine whether and how eligibility rules have changed during our observation period to see if this could potentially be a significant driver of residualisation (research question 1).

An important aspect of our contribution is the discussion of eligibility and allocation rules together with residualisation indicators based on tenants' income. Using a set of residualisation indicators proposed in recent work (Sects. 2 and 5.1), we address this question: Has the social housing sector in Austria, similar to many other countries, become more residualised since 1995 and do we observe a growing income inequality between social housing and other tenure types (research question 2)? Are there different patterns of residualisation between social housing subsectors (municipal housing, LPHA) and/or between Vienna and the rest of Austria (research question 3)?

Levels of residualisation in social housing could be due to changes in the profile of existing tenants but also to the entry and exit of tenants with certain characteristics. We are not aware of any studies that have systematically investigated this question. Therefore, in this paper, we conduct a detailed analysis of the income of households that change tenure as opposed to those who remain. We ask if residualisation is driven by richer households moving out and poorer households moving in, or rather by a fall in the incomes of remaining tenants (research question 4).

Our data come from the Austrian European Community Household Panel and the Austrian Survey on Income and Living Conditions. As measures of residualisation we compute four indicators based on tenants' household income. We analyse time series of these indicators to answer research questions two and three. To answer our fourth research question, we estimate logistic regression models to test whether the impact of income on the probability of living in social housing has changed over time. We also take advantage of the panel structure of our data and examine the income structure of tenure switchers.

This paper is structured as follows. Section 2 elaborates on the international debate on residualisation in social housing and how it is linked to developments in other tenures. Section 3 provides an overview of the characteristics of social housing in Austria. Section 4 addresses our first research question and discusses changes in eligibility rules over the last decades. Section 5.1 describes the data and methods used to calculate the residualisation indices. We use several indicators to increase the robustness of our findings. Sections 5.2, 5.3 and 5.4 present our main results for research questions 2, 3 and 4. In Sect. 6, we address the nexus between allocation rules and tenants' income profiles and discuss possible drivers of sectoral and regional differences in residualisation trends. We show that 'social housing residualisation' is most effective as a framework for analysis when it is discussed in parallel with developments in other tenures.

2 Debates on residualisation

A trend towards residualisation of public housing can be traced back to the 1950s in the UK (Meusen and Van Kempen, 1995; Clapham, 2005) but is most commonly perceived to have gained impetus in the 1990s and 2000s in light of the restructuring of the welfare state and affecting more and more countries and tenure types, i.e. not only publicly owned social housing but various forms of limited-profit, below-market rent housing (Gibb, 2002; Scanlon et al., 2014; van der Heijden, 2002). Residualisation is thus imbedded in a large-scale tenure restructuring, with an increase in homeownership,

a dissolution of tenure neutrality in state policy, and an accelerated marketisation of housing provision in line with processes of ‘housing commodification’ (Kadi & Ronald, 2014) and its ‘assetisation’ (Stirling et al., 2023).

The main element in the trend of residualisation, which is the retrenchment of government support to social housing, varies by country. It may be due to a shift in subsidy allocation (e.g. in Sweden: Borg, 2019; Turner & Whitehead, 2002; Whitehead, 2017), the introduction of a right-to-buy (e.g. in the UK: Williams et al., 1988) or large-scale privatisations and market reforms in Eastern Europe (Lux & Sunega, 2014; Ogrodowczyk & Marcinczak, 2021). The remaining, now much smaller, social housing sectors are usually affected by a restructuring of eligibility rules with a refocusing of social housing on the most economically vulnerable population groups (Scanlon et al., 2014). In the EU, this tendency towards a narrower group of potential beneficiaries is enhanced by the prevailing understanding of EU competition law, so that states with more universalist approaches are encouraged to move towards a more targeted and therefore “residualised” system (Czischke, 2014; Hoekstra, 2017; e.g. in the Netherlands: Musterd, 2014; Angel, 2023). According to EU competition law, government intervention in the field of social housing is only allowed if such housing is reserved for disadvantaged groups which due to income constraints are unable to obtain market housing (in detail: Czischke, 2014).

When discussing the residualisation of social housing in a cross-country context, Tunstall (2021) has pointed out that it is crucial to distinguish between the *process* and the *state* of residualisation. Thus, a system may go through a process of moderate residualisation while remaining quite mixed, depending on the initial state of residualisation. Indeed, social housing systems that are considered ‘residual’ were always and by design intended to be reserved for a small and disadvantaged section of the population, while other systems take a much more generalist or even universalist approach to social housing allocation (Whitehead, 2017). Housing systems with a large and non-exclusive social housing sector can experience a process of residualisation without becoming fully ‘residualised’ or converging towards this type of housing system. Austria seems to be an example of this development, as we will investigate in our analysis.

The process of residualisation of social housing usually has a negative connotation and is often discussed in the context of the new challenges associated with reduced public support and lack of investment in the social housing stock, a reduction in its spatial distribution and an increased concentration of poor and vulnerable households (Scanlon et al., 2014; Galster & Friedrichs, 2015; Whitehead, 2017; Borg, 2019; Costarelli, 2022). It is becoming increasingly important for policymakers to monitor the extent of residualisation of social housing to design appropriate policy responses that help prevent a vicious circle of underinvestment, increased stigmatisation and reduced social cohesion that can result from an ongoing process of residualisation. Consequently, recent studies have included the aspect of how policies have been implemented to ‘de-residualise’ social housing (Tunstall, 2021).

Different approaches are used to measure residualisation, either by looking at the physical state/quality of social housing (e.g., Clapham & Maclennan, 1983; Forrest & Murie, 1983), or at tenant characteristics and their income situation (e.g., Pearce & Vine, 2014). Recent papers put forward a strong claim to using tenant income developments as important indicators of residualisation. A set of indices is proposed that consider the changing size of the social housing sector and the income distribution of the population over time (e.g. Angel, 2023; Borg, 2019; OECD, 2023; Pearce & Vine, 2014; Stephens et al., 2003). In our paper we follow this line of empirical investigations (Sect. 5.1).

However, the international debate has shown that an exclusive focus on social housing and its residualisation is too narrow and does not uncover the interrelationship with developments in other tenures. The concept of ‘socio-tenure polarisation’ (starting with Hamnett, 1984) takes account of differences between tenure groups, usually two groups, i.e. social rented and owner-occupied, but later extended to multi-polar considerations as private renting became more important (Tunstall, 2021). Residualisation of social housing must therefore be seen in the context of homeownership becoming a more exclusive tenure as prices have risen faster than incomes in many cities and countries. The development, where housing moves from being a consumer good to an investment good, is accompanied by a change in the players and their motives in the housing market and has been described as the ‘assetisation of housing’ (Stirling et al., 2023). It is a trend that, for example in the UK, can be traced back to well before the 1980s, but which has gained momentum in the last decade in the UK and other countries in line with banking deregulation and credit liberalisation, but also driven by a shift in housing policy to encourage homeownership to play a greater role in asset-based welfare (Doling & Ronald, 2010). We return to this important link between social housing and homeownership in Austria when interpreting our results in Sect. 6.

3 Subsectors of social housing in Austria and the special position of Vienna

The most common definition of social housing used in Austria for international comparisons is to include subsidised rental housing by LPHAs and municipalities (Mundt, 2018; Reinprecht, 2014). Municipal housing is highly concentrated in Vienna, while outside Vienna LPHA are the dominant form of social housing providers: 24% of main residences in Austria are social housing, i.e., 7% municipal housing (i.e., 275.000 dwellings, 202.000 of which in Vienna), and 17% LPHA rental dwellings (i.e., 666.000 dwellings) (Statistik Austria, 2021), one of the largest shares in the OECD (OECD, 2023). Thus, in addition to the municipality of Vienna, the main providers of social housing in Austria are the LPHAs: 185 LPHAs manage around 950.000 housing units throughout Austria (Kössl & Gutheil-Knopp-Kirchwald, 2021). Both, municipal and LPHA rental housing are cheaper than market options and offer unlimited-term contracts (Statistik Austria, 2021). For other regions than Vienna, the LPHA rental market segment takes over the function of municipal housing, i.e., it is the cheapest rental market segment and focusses on low-income households and vulnerable groups.

The importance of LPHAs as providers of social housing in Austria has received strong academic attention in the last decades (Matznetter, 2002; Amann and Mundt, 2010; Deutsch & Lawson, 2012; Reinprecht, 2014; Norris & Byrne, 2017; Mundt, 2018; Klien & Streicher, 2021) and has inspired policy makers across the globe due to its long tradition, its comprehensive legal framework, and its influence on beneficial housing outcomes such as its potential to mitigate high rents across the market (e.g. Klien & Streicher, 2021; OECD, 2023). In a nutshell, some cornerstones of the LPHA sector are the long-term obligation to reinvest (limited) profits in new construction; the calculation of cost-rents based on historical land, finance, and construction costs; the privileged access to regional subsidy schemes that safeguard affordable cost-rents; the detailed legal structure specified by the LPH Act; and the tight two-tier framework of audits and controls. Unlike in Germany, where social housing retains its status only for the time span of open subsidies, LPHAs in

Austria must charge cost rents throughout the existence of the building and thereby create a long-term social housing stock.

Due to a continuous political support reflected in regional bricks-and-mortar subsidies, the LPHA sector has increased in volume over time. LPHA housing construction accrued to 25% to 40% of overall housing completions in Austria since the 1980's, with a particularly strong performance in the 1990's (Kössl & Gutheil-Knopp-Kirchwald, 2021). On average 2010–2020 the sector completed 16,200 units per year, which explains why the share of social housing in tenures has increased gradually. A limited right-to-buy that applies to parts of the stock (see Sect. 4) has not outweighed this trend.

4 Social housing allocation principles and recent changes

As more targeted allocation has triggered or reinforced a trend towards residualisation of social housing in other countries, the first step of our analysis is to examine for Austria how units are allocated in the different sub-sectors of social housing and whether there have been significant changes during our observation period.

Allocation of subsidised housing in Austria follows a two-tier process. *First*, on the level of the nine regions, regional housing subsidy laws define the parts of the population that, in general, qualify for subsidised housing. This includes especially and throughout all regions, the social rental housing stock, mostly in multi-storey buildings and provided by LPHAs. Access criteria vary by region but in all regions comprise at least the following three: minimum age (usually 18), Austrian nationality or equivalent (e.g., EU citizens or long-term third-country residents), maximum net household income in accordance with household size. Criteria are set quite broadly so that large parts of the population, in theory, have access to subsidised housing. Since the regionalisation of housing subsidy legislations in the late 1980's some regions have lowered their income limits from the formally federal values. Others, especially Vienna with the highest income limits across the regions, have continuously increased their maximum income limits over the years to adapt for inflation and safeguard a broad access to social housing in principle. Our analysis shows that income thresholds lie between the 75th and the 90th percentile of the total national household income distribution in Salzburg and Upper Austria and even higher in Vienna (Fig. A1 in the appendix). Such high-income ceilings for social housing substantiate the approach that Austria is considered a “generalist” system of social housing allocation.

Second, in addition to the legal access criteria, the actual allocation of subsidised social rental housing in practice is organised according to criteria of need and usually allocated by waiting lists at the level of municipalities (Oberhuber et al., 2012).

Most regions in Austria follow this two-tier process of social housing allocation, albeit with some variation. Vienna has a more differentiated social rental housing allocation strategy which needs further clarification. Municipal housing is a fundamental part of social housing in Vienna and has traditionally played a more important role than the LPHA stock. Like in other regions, the Viennese housing subsidy law demarcates population groups that can apply for social housing in principle. However, for some parts of the stock, additional criteria of *urgent housing need* have to be proven in order to access the waiting list. This stock includes the entire municipal rental stock and the part of the LPHA social housing stock that is highly subsidised (and therefore cheaper) or where tenants' capital contributions are low (Mundt & Amann, 2018). Criteria of urgent housing include overcrowding at current address, first-time movers from parental address (“young Viennese”),

single parents, special housing needs (e.g., due to disabilities or old age) (Wohnberatung Wien, 2021). Moreover, the municipal housing company “Wiener Wohnen” closely works together with social institutions in search of viable housing options for their clients who are vulnerable groups on the housing market (integration of homeless people, assisted living, reintegration from institutions etc.). Many municipal housing allocations in Vienna are such “social allocations”.

This general structure of social housing allocation has remained stable through our period of investigation. However, there was one important amendment to allocation in Vienna following EU legislation in 2006, when access to municipal housing was opened to long-term third country nationals and, as a result, the waiting list increased strongly when this new group of potential beneficiaries started to apply for social housing.

Additionally, one trend can be observed that might negatively affect access to the LPHA sector for low-income households: In some regions, cost-based rents of the LPHAs are kept low throughout the renting period by collecting capital contributions of future tenants that constitute an important factor in financing new projects. Such “tenants’ capital contributions” are similar to a deposit and are paid by the new tenant when moving in. They lose 1% of their worth every year, the remaining sum being paid out to the tenant when he/she moves out (Mundt, 2018). In some regions (especially Vienna) special targeted loans are available to substitute these capital contributions. However, over our investigation period, capital contributions have tended to increase considerably. They can be high in localities where building land is particularly expensive. With volumes rising above € 30,000 for a two-bedroom apartment in some regions, they can exacerbate accessibility to the social rental stock for low-income (and low-savings) households (Mundt & Amann, 2018) and thus decrease residualisation in LPHA housing. Additionally, since 1994, LPHA housing with high capital contributions has a right-to-buy option after 10 years (changed to 5 years starting from 2019). If the relatively more well-off LPHA tenants exercise this option and become homeowners, the level of residualisation in that sector could increase *ceteris paribus*.

Overall, this first look at changes in allocation legislation yields mixed results: In LPHA housing there were no incisive changes in allocation practices, if any, access has been expanded by raising maximum income limits above the real development of the income distribution. As for municipal housing in Vienna, the opening of the sector to long-term immigrants has enlarged the scale of potential beneficiaries considerably. We conclude that it is not sufficient to look at changes in allocation rules alone to assess residualisation, but we now turn to the analysis of the actual income of tenants over time.

5 Empirical analysis

5.1 Data and methods

We pool annual cross-sectional data 1995 to 2018 from the Austrian European Community Household Panel (ECHP 1995–2000, panel data) and its successor, the Austrian Survey on Income and Living Conditions (SILC 2004–2018, rotating panel with max three follow-up years). Samples are representative for the Austrian resident population, excluding the homeless and those outside private households. The total sample size ranges from 2260 to 3379 households in the ECHP and from 4521 to 6806 in SILC (Tables A1 and A2).

Table 1 Tenure split in Austria (proportion of households in tenure types)

Row %	Owner	Municipal	LPHA	Private rent	Subtenant	Other (rent-free)
1995	50	9	11	18	3	9
2000	53	9	10	17	2	10
2010	50	8	14	18	2	8
2018	48	7	15	19	1	9

Own calculations based on ECHP and SILC, households, frequencies using sampling weights

SILC & ECHP is currently the only source in Austria to analyse income and housing tenure within the same data across the whole resident population.¹ A household's total disposable income is used for all measures of residualisation (henceforth "income"). It includes income (after tax), social transfers and old-age pensions and is adjusted for household size (using the 'modified' OECD scale).

The housing tenure variable contains the following categories: owner (outright or with mortgage), tenant renting from a private person or private company, tenant renting from an LPHA, tenant renting from a municipality, subtenant renting from another tenant, rent free accommodation.² The tenure split in Austria (Table 1) based on ECHP and SILC data shows a high degree of stability. What stands out is the slight decrease in the ownership share since its peak in 2000 and the increase of the share of households in LPHAs over the last 25 years. This reflects the continuously high construction output of the sector mentioned in Sect. 3. Furthermore, municipal housing is largely concentrated in Vienna whereas outside Vienna many more households are owners.

To get a comprehensive picture of social housing residualisation we follow the approach in Angel (2023) and use multiple indicators. First, we look at the percentage of households from the bottom income tertile who reside in social housing. Second, we compare median incomes between social housing and other tenures. These two measures have clear and simple interpretation. However, using medians and tertiles does not exploit the full distribution of income.

To overcome this, we use the index of residualisation by Pearce and Vine (2014). It compares the incomes of those residing in a particular tenure with the incomes of the whole population. While our focus is on social housing, we can calculate the index for all tenure groups and display changes over time relative to each other (Fig. 2). Overall, the Pearce/Vine index is thus more fine-grained than the previously mentioned two measures.

¹ The Austrian 'microcensus' offers a larger sample size and more time periods but does not provide household income data at the same detailed level as SILC/ECHP.

² For ease of presentation, the remainder of our analysis excludes the latter two types. These are not of central interest to the paper and cover a broad and heterogeneous range of housing tenure constellations (e.g., if the accommodation comes with the job or is provided free by relatives), for which we lack sufficient details for proper interpretation. Owner-occupied refers to both single-family housing, apartment or any other dwelling type. The same applies for rental housing.

For the calculation of the index, we need to divide the population incomes into income bands. Similar to Pearce and Vine (2014) we split household income into population deciles. The index is calculated as³

$$R_S = \frac{L_S}{K} - 1 \quad (1)$$

with $K = 0.5$ and

$$L_S \approx \sum_{i=1}^{10} \frac{1}{2} [F_S(p_i) + F_S(p_{i-1})] (p_i - p_{i-1}) \quad (2)$$

where p_i is the proportion of households in the total population at or below point p_i and $F_S(p_i)$ is the proportion of households in the subpopulation at or below point p_i . It is zero if the income distribution of the subpopulation is identical to the total income distribution. Values above zero indicate an overrepresentation of low-income households, while values below zero indicate an overrepresentation of high-income households. The higher the index greater 1, the higher the level of residualisation in a given tenure.

To ascertain the robustness of our results, we calculate a fourth indicator of residualisation, proposed by Stephens et al. (2003), which takes account of the varying size of the social housing sector over time. As an additional gain, the Stephens index is based on tertiles and thus allows to compare Vienna with the rest of Austria (Fig. 3), whereas with the Pearce/Vine index this is not feasible due to small sample sizes. For each year, we divide the percentage share of each income tertile residing in the social rental sector by the share of that sector in the overall tenure distribution. If the social rental sector houses disproportionately more households from the bottom income tertile, the Stephens index will be greater than 1. The higher this index greater 1, the higher the degree of residualisation.

Finally, we are interested in the probability of social housing given a household's income. We estimate separate bivariate logistic regression models⁴ for each year, where the dependent variable is coded "1" if a household currently has a specific tenure status (e.g. municipal housing) and coded "0" otherwise.⁵

5.2 Residualisation of social housing in Austria

Figure 1 provides a first look on residualisation as measured by the concentration of low-income households in social housing. First, we see that the share of households from the bottom income third has increased in both the municipal and the LPHA rental

³ The index of residualisation is derived from the Lorenz Curve, similar to the Gini coefficient. K is the area under the 45° line in a situation of proportionality and thus 0.5 if we scale the cumulative percentages between 0 and 1. See Pearce and Vine (2014) for further details with graphical illustrations of L_S and Angel (2023) for a numerical example.

⁴ Adding covariates to the model would clean the income effect from other supply (e.g., discrimination due to citizenship) and demand side restrictions (e.g., access to information or search and moving behaviour correlated with socio-demographic variables, changing socio-demographics of the low-income households). However, our focus is not on the "causal" effect of income, but on its gross correlation with the likelihood of social housing (and other tenure types). Consequently, we do not include covariates.

⁵ This approach is also independent of the overall size of the social rental sector. Furthermore, regression modelling – via interaction effects of income and year – allows us to test if the effect of income on the probability of residing in social housing changed significantly between a base year and a given year.

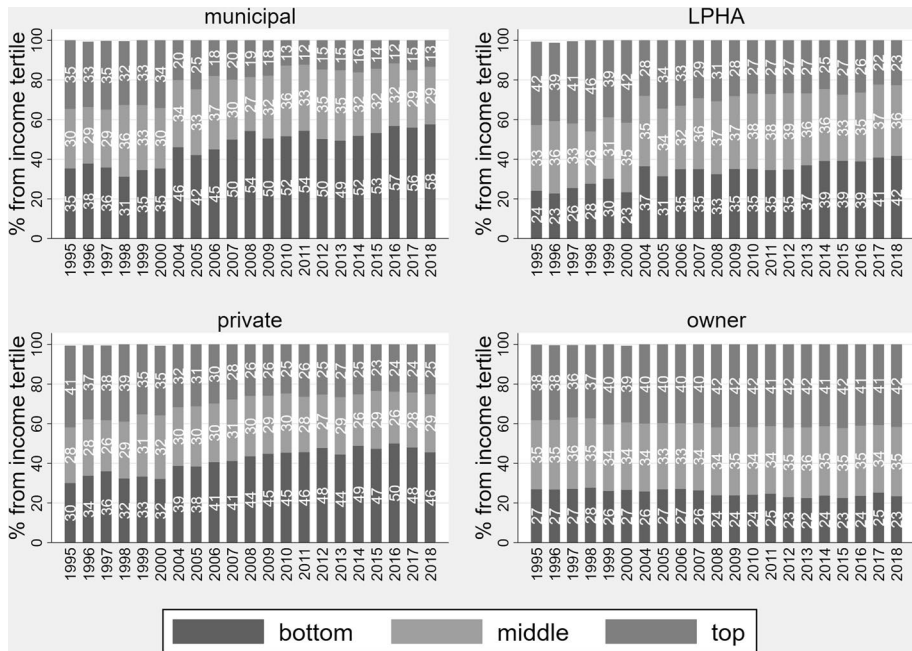


Fig. 1 Income profiles for tenure groups. Income tertiles are derived from the national distribution of household income. No data available for 2001–2003. ECHP data: 1995–2000. SILC data: 2004–2018

Table 2 Sociodemographic profile of social housing tenants

	Total		Municipal		LPHA	
	2004/06	2018	2004/06	2018	2004/06	2018
% with university degree ¹	11	22	4	11	6	17
% receiving social exclusion transfers or housing allowances	6	7	18	22	15	13
% main earner's country of birth not Austria	16	20	23	36	17	21
% household with dependent children ^{2,4}	30	27	28	24	30	26
% single parent households ^{3,4}	4	3	8	5	6	4

Own calculations based on SILC Austria. Unit of analysis = household

¹At least one household member with tertiary degree

²Defined as children, adolescents, and dependent young adults under the age of 25. In addition to those under 16, 'children' are also persons under 25 who live with at least one parent and are not gainfully employed

³The household consists of one adult and at least one dependent child

⁴Due to data availability we compare to 2006 instead of 2004

sector, whereas it decreased for owners. Second, in all years the concentration of low-income households is highest in municipal housing and lowest among owners. The LPHA sector sits between owners and the private market rental sector in this regard.

Table 3 Ratio of median incomes

	Austria			Austria		
	Tenure group.../municipal			Tenure group.../LPHA		
	(1) Owner	(2) Private	(3) LPHA	(4) Owner	(5) Private	(6) Municipal
1995	1.10	1.08	1.16	0.95	0.93	0.86
2005	1.19	1.06	1.15	1.04	0.92	0.87
2015	1.44	1.09	1.19	1.21	0.91	0.84
2018	1.46	1.14	1.18	1.23	0.96	0.84
	Vienna			Not Vienna		
	Tenure group.../municipal			Tenure group.../municipal		
	(1) Owner	(2) Private	(3) LPHA	(4) Owner	(5) Private	(6) LPHA
1995	1.22	0.97	1.40	1.24	1.29	1.23
2005	1.39	1.14	1.36	1.22	1.02	1.09
2015	1.44	1.08	1.34	1.56	1.15	1.22
2018	1.63	1.14	1.39	1.42	1.12	1.10

Own calculations based on ECHP/SILC Austria

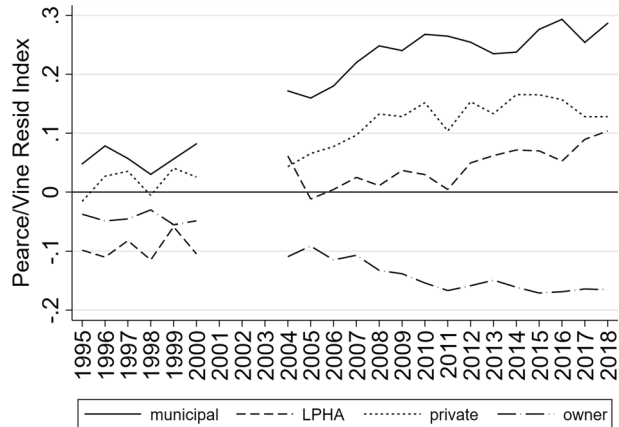
Table 2 contains a more detailed description of the LPHA and municipal renters' sociodemographic profile. We first compare the municipal to the LPHA sector at a given point in time. In all years, tenants in the former are more often recipients of social transfers and they less often hold a tertiary degree. Concerning the household type, differences between municipal and LPHA rental housing are rather small. In a second step, we look at developments over time. Overall, trends for the selected characteristics are similar to the total population. Yet, the share of households with a university degree, which doubled overall between 2004/06 and 2018, almost tripled in both the municipal and the LPHA sector. The 2006 opening of the municipal sector to long-term foreigners, is highly visible in the disproportional increase of households where the main earner's country of birth is not Austria.

We proceed our analysis with a comparison of median incomes (Table 3). What stands out is that owners have continuously increased their distance to both types of social housing. Second, municipal tenants generally have the lowest incomes. Their median incomes are slightly lower than the ones of private renters' and this pattern hardly changes over time. Third, incomes in the LPHA sector surpass those of private renters and even more so those of municipal renters. Again, distances of LPHA incomes to these two rental sectors have not changed much over time.

We find that the change in the income ratio is strongly driven by owners becoming disproportionately richer over time. The compound annual nominal growth rate of median equalised household incomes in our observation period was highest for owners (3.4%), followed by private renters (2.2%), LPHA tenants (2%) and municipal tenants (1.9%). Austria's inflation rate was around or below 2% in almost all years from 1995 to 2021.

In the next step, we consider the full range of the income distribution and plot time series for the Pearce/Vine index (Fig. 2). This confirms what we have observed so far: an increase in residualisation for municipal and private renters and a clear decrease for owners. The LPHA sector only started to get more residualised from 2011 onwards. Throughout all years, the level of residualisation is highest in the municipal rental sector followed

Fig. 2 Pearce/Vine residualisation index by tenure. Zero means that the income distribution of a specific sector is identical to the overall income distribution (across all sectors). Higher values correspond to higher levels of residualisation (=relatively more low incomes are concentrated in this sector)



by the private rental sector and the LPHA sector. Finally, the generally smaller distances to the zero line also indicate that the “social mix” across tenure groups was higher in the first observation period from 1995 to 2001 than later.

5.3 Residualisation differences between Vienna and the rest of Austria

Our second research question refers to differences in residualisation between the capital Vienna and the Rest of Austria. From Table 3 we see that income difference between owners and both types of social housing is much more pronounced in Vienna. Also, income differences between other sectors and municipal housing are larger in the capital than outside the capital.

For a further comparison between Vienna and the rest of Austria, we turn to the Stephens index (Fig. 3). The vertical axis displays if the municipal/LPHA rental sector houses disproportionately more (>1) or less (<1) households from a particular income tertile (low/middle/top) compared to the overall relative size of that sector. The negative slope of a line fitted to the datapoints captures the degree of residualisation. If we compare Vienna and the rest of Austria, two main findings stand out: first, in Vienna there is an increase in residualisation among municipal renters since the beginning of our observation period (1995), whereas outside Vienna there is hardly any change over time; second, for the LPHA sector a pattern of increasing residualisation only becomes visible outside Vienna and at the end of our observation period. In Vienna, LPHAs even house disproportionately *less* households from the bottom income group.

5.4 Dynamics of the income effect and tenure switchers

What do the data tell us about the process of residualisation from the perspective of a household with a given income? Figure A2 in the appendix shows that the highest income tertile is less and less present in the municipal rental sector over time. Furthermore, over time there is an increasing gap for ownership between the first and the third income tertile. To test for a change of the correlation between income and tenure we estimate interaction

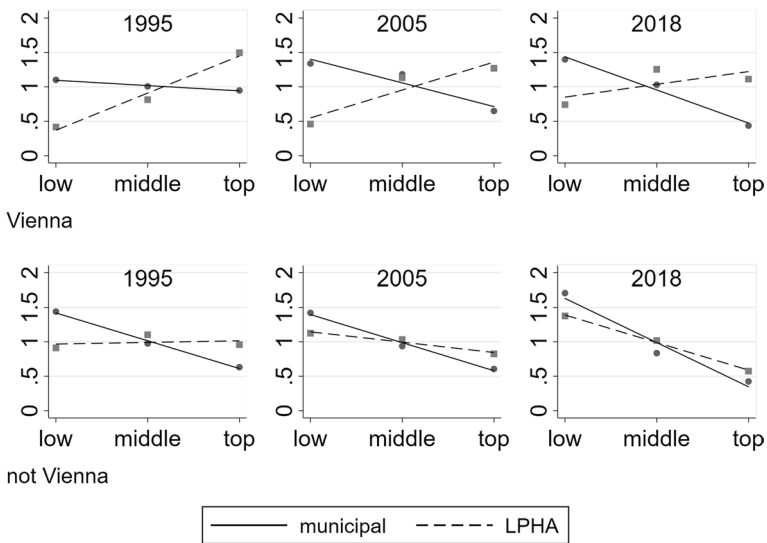


Fig. 3 Stephens index. Vertical axis shows the ratio of the share of each group in a given tenure group divided by the share of that tenure group in the total population. This measure is “one” if the proportion of e.g., LPHA renters from the bottom income group equals the proportion of LPHA renters in the total population. If the LPHA rental sector houses disproportionately more/less 1st income tertile households, this measure will be greater/smaller than 1. Consequently, the higher this index > 1 for the bottom income group the higher the degree of residualisation. Steeper slopes also show larger differences of the Stephens index between the 1st and the 3rd income tertile

effects⁶ between income and $n-1$ time-dummies for 2004–2018 (with 2004 as base year) in the regression model for Austria (Fig. A3). We find statistically significant negative interaction effects for ownership and significantly positive interaction effects for private renting in multiple years. Further analyses (Figs. A6 and A7) reveal that these outcomes are mainly driven by trends outside Vienna. For the municipal sector, however, the evidence is less robust. Differences between Vienna and outside Vienna for the income effect cannot be observed (Figure A4). Finally, there is practically no change of LPHA odds ratios between the 3rd and the 1st income group during the observation period. For LPHAs the regression analysis also complements previous outcomes (Fig. 3): low-income households have a higher chance of LPHA tenure only outside Vienna, whereas in the capital this pattern is reversed (Fig. A5). To sum up, the “income gradient” for tenure has become stronger over time but mostly for ownership and private renting and hardly for social housing. This confirms our prior observation that (mainly outside Vienna) ownership has become a more exclusive tenure over the years.

To further investigate this conjecture, we conduct a tenure-switcher-analysis, grouping all households into three categories of “stayers”, “leavers” and “joiners” in relation to a particular housing sector within a year prior to their survey interview (Table A4). By analysing the average median household incomes of these groups between 2004 and 2018, we find a clear pattern: In the municipal housing sector, it is always the richest that leave the

⁶ A coefficient greater 1 for a specific year means that the relative difference in the odds for a given tenure between the 3rd and the 1st income tertile has become larger as compared to the base year 2004.

sector, while joiners have lower incomes than stayers. In the owner-occupied sector, it is the other way around: leavers are the poorest group. In the LPHA and private rental sectors, the outcome is more ambiguous, but similarities to the owner-occupied sector prevail for both, i.e., households remaining in the sector have (slightly) higher income than those leaving.

In sum, the switcher analysis confirms the function of municipal housing as “sector of last resort” and shows how residualisation is more strongly driven by richer households moving out and poorer households joining, than by an income decline of sitting tenants. At the same time, we see that the supply of municipal housing is decreasing as a percentage share. While there were 269 municipal housing units to every 1000 households in Vienna in 1995, this number declined to 220 by 2018 (own calculation based on microcensi). Municipal housing residualisation is thus driven by both factors: a declining share in overall tenures and a strong in-movement of poorer residents. The LPHA sector, in contrast, has the luxury that it is growing and could sustain increased targeting.

6 Discussion and conclusions

We investigate if the widely observed increase in the residualisation of social housing also applies to Austria, a corporatist welfare state with a long tradition of a generalist social housing system (open to a wide range of households). Austria has one of the largest, and, against the trend, still growing social rental sectors in Europe (Housing Europe, 2023).

Our main outcome is that social housing has become more residualised in Austria. In the municipal sector we observe a rise of residualisation from 1995 to 2018, whereas for the LPHA sector this happened only in the most recent decade (and mainly outside Vienna). Nonetheless a high level of “social mix” and generous income limits remain cornerstones of social housing allocation policies. In fact, we find that income thresholds have been raised and the group of potential beneficiaries has been widened over the period, so that changes in allocation practices cannot be seen as the driver of residualisation. Much of the increase in residualisation of social housing is rather driven by a growing income difference to owners.

The marked increase in residualisation of social housing shows that concerns about the Austrian system being too universalistic, as opposed to a more targeted approach favoured by EU competition law (Czischke, 2014), appear to be unfounded when the income structure of social tenants is considered as an indicator of residualisation. The increase of (income) residualisation in Austria reflects European trends, although from a comparative perspective, the level of residualisation is still one of the lowest (Angel, 2023). While Pearce and Vine (2014) estimate a value of around 0.5 for their index for the UK in the 2000s, it only ranges between 0.2 and 0.3 (municipal housing) in Austria during this period (Fig. 2).

Nevertheless, our analysis also shows that the two social housing segments clearly cater to different population groups. The *municipal* sector, on the one hand, displays the highest level of residualisation across all indicators. Since municipal housing is strongly concentrated in Vienna, regional differences we find between the capital and the rest of Austria strongly interact with the sectoral differences in residualisation. In Vienna, the income distance of municipal housing to all other tenure types including LPHA housing is largest in the recent past (Table 3). Some possible causes for the strong residualisation of municipal housing in Vienna have been proposed in the literature (Friesenecker & Kazepov, 2021;

Gutheil-Knopp-Kirchwald & Kadi, 2017; Kohlbacher & Reeger, 2020): First, the number of low-income and vulnerable households has increased in absolute and relative terms over the last decades. A strong influx of low-income migrants has further increased demand for municipal housing. Following EU legislation in 2006, the opening of municipal housing to long-term third country nationals secured a high share of new allocations towards this group. Second, because of the continuous upgrading of the stock and resulting higher rents in new contracts, cheap *private* rental housing options are disappearing. Also, less rent control applies to new contracts. This is however a slow process as it affects only households who are currently looking for options in the private market. Sitting tenants, on the other hand, still enjoy rent-controlled and often long-term contracts and are not pushed out of their private rental dwellings. We see this in an only slowly decreasing share of low-income households in the private sector in recent years. Much more salient, and underexplored in previous research, is the third possible cause of increased residualisation of social housing that emerges from our analysis: the declining share of higher income households in the remaining stock. Remarkably, if this trend is based on the exit of income rich households, their relocation is voluntary: From a tenancy rights' perspective they could have stayed in the sector, because contracts are open-ended and income limits are not controlled after initial allocation. It seems that such households, concerned with an increasingly bad reputation of municipal housing, seek other housing options as soon as they can afford them. In fact, housing satisfaction in the municipal stock in Vienna has decreased strongly since 1995 (Verwiebe et al., 2020). On the other hand, it seems rather unlikely that a lack of investment or housing quality problems have a major impact on the decision of richer households to move. Quality differences to the rest of the housing stock are small (Statistik Austria, 2019), particularly for newer municipal dwellings (Reinprecht, 2014).

The *LPHA* sector, on the other hand, has residualised only to some degree and primarily outside Vienna. This finding of a 'residualisation trend' has to be interpreted with care as the sector is still far from being a tenure 'of last resort'. Tunstall's (2021) differentiation between 'process' and 'state' of residualisation discussed above shows to be of particular importance to the Austrian case. Tenant profiles are still very mixed, but using our income measures, our analysis shows that the sector is now catering to middle *and* lower income households, whereas in the past the focus was on middle incomes. The residualisation trend we find is rather small and has only gained momentum since 2011. This finding may be related to the lagged effects of the right-to-buy legislation that has been in place for LPHAs since 1994, where the relatively better off are able to convert their tenure status to ownership, leaving the relatively less well-off behind. Second, as documented for other countries (Clapham et al., 2014; McKee et al., 2017), a stronger focus on households with low incomes could be a reaction to increasing demand for affordable rental housing from 'generation rent', i.e., younger birth cohorts (with lower incomes) who in the past would have bought their home but cannot afford ownership anymore.

Especially in Vienna the LPHA sector has not yet reached the state to safeguard the safety net function of social housing and thus to disencumber municipal housing and contribute to a larger social and spatial mix across sectors. It should be quite clear that LPHA housing has to embrace this function more strongly in the future as private affordable options disappear and, even though a right-to-buy in municipal housing was never implemented, the municipal stock decreases in percentage as new construction is minimal relative to population growth (Kadi, 2015). From this point of view, the low level of residualisation in LPHA housing in Vienna does not imply the negative connotation or residualisation that is so evident in other country studies, but rather remedies the Austrian peculiarity that the LPHA sector has not contributed sufficiently to housing low-income households

in the past. Subsidy schemes have already been introduced that result in very low rents and low or no capital contributions, targeted at poor and vulnerable households and mainly built by LPHAs (e.g. the SMART scheme in Vienna). To prevent greater residualisation of the municipal stock — the fallback option for low-income households and vulnerable groups — LPHAs need to increase their commitment to housing these groups, e.g., by making greater use of targeted subsidy schemes (which are slow to take effect as they only influence new construction), or by targeting the relocation of particularly affordable units in the LPHA stock to those most in need.

From our empirical analysis we also conclude that it is important to study the residualisation of social housing in close relation to what happens in other tenures, especially the owner-occupied sector. In Austria, the latter plays an important role in understanding our findings. We show for both types of social housing that the growing income distance to owners is salient, particularly in Vienna, and that socio-tenurial polarisation between the social housing and ownership sectors accompanies the trend of residualisation.

As prices have risen strongly in urban centers over our observation period (OeNB, 2021), low-income households have lost their ability to acquire housing equity and consequently their share in the ownership sector decreased over the last two decades. Rising house prices, especially for apartments in the multi-storey stock in Vienna, attracted additional money from national and international investors and have increased the trend towards the ‘assetisation of housing’, which Austria has been unaffected by for much longer than other countries (Kadi, 2015; Plank et al., 2022). With the latest price dynamics at the end of our observation period advancing a “now-or-never” attitude, anyone who can still afford it is keen to access the “housing ladder” at the soonest possible moment. Our analysis of tenure-switching, which groups all households into three categories of ‘stayers’, ‘leavers’ and ‘joiners’, clearly shows that the widening income gap between social housing and other tenures is the result of the highest income tertile moving out of the stock. Given the high quality standards in the social housing sector (Mundt, 2018; Hernández-Morales, 2022; NYT, 2023), stigma or housing quality issues seem to play only a minor role for this trend. The increased relative attractiveness of ownership appears to be more important than tighter eligibility rules or reduced investment in social housing.

Further research is needed to disentangle the drivers of residualisation in more detail, e.g., by estimating separate residualisation indices for tenure switchers and stayers, by using longer panel data to illustrate tenure careers, or by focusing on young adults moving out of their parents’ home to gain more insights into cohort-specific reliance on social housing. Unfortunately, the currently available data do not provide sufficiently large sample sizes for subgroups. This also limits our ability to carry out more precise regional analyses. A potentially informative exercise would also be the extension of our switchers analysis to other countries or its application to comparative European data. Regarding our finding that voluntary exits by high-income households pose a major challenge to maintaining social mix in social housing, further research on motivations for moving and possible policy responses is also desirable.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s10901-024-10110-z>.

Funding Open access funding provided by Österreichisches Institut für Wirtschaftsforschung (WIFO) - Austrian Institute of Economic Research.

Declarations

Conflict of interest The authors certify that they have NO affiliations with or involvement in any organisation or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Amann, W., Mundt, A., & Hüttler, W. (2012). Austria. Social housing providers at the forefront of energy efficiency. In N. Nieboer, S. Tsenkova, V. Gruis, & A. van Hal (Eds.), *Energy efficiency in housing management. Policies and practice in eleven countries* (pp. 151–175). Routledge.
- Angel, S. (2023). Housing regimes and residualization of the subsidized rental sector in Europe 2005–2016. *Housing Studies*, 38(5), 881–901.
- Austria, S. (2019). *Wohnen 2018*. Statistik Austria.
- Austria, S. (2021). *Tabellenband Wohnen 2020*. Statistik Austria.
- Borg, I. (2019). Universalism lost? The magnitude and spatial pattern of residualisation in the public housing sector in Sweden 1993–2012. *Journal of Housing and the Built Environment*, 34, 405–424.
- Clapham, D. (2005). *The meaning of housing: A pathways approach*. Bristol: Policy Press.
- Clapham, D., Mackie, P., Orford, S., Thomas, I., & Buckley, K. (2014). The housing pathways of young people in the UK. *Environment and Planning a: Economy and Space*, 46(8), 2016–2031.
- Clapham, D., & Maclellan, D. (1983). Residualisation of public housing: A non-issue. *Housing Review*, 32(1), 9–10.
- Costarelli, I. (2022). The social managers are back in town: The challenges of housing management in a residualised public housing sector. *Critical Housing Analysis*, 9(2), 43–51.
- Czischke, D. (2014). Social housing and european community competition law. In K. Scanlon, C. Whitehead, & M. F. Arrigoitia (Eds.), *Social housing in Europe* (pp. 333–346). Wiley-Blackwell.
- Deutsch, E., & Lawson, J. (2012). International measures to channel investment towards affordable rental housing: Austrian case study. *Study by the Australian Housing and Urban Research Institute for the Government of Western Australia*, Melbourne: AHURI.
- Deutsch, E. (2009). The Austrian social rented sector at the crossroads for housing choice. *European Journal of Housing Policy*, 9(3), 285–311.
- Doling, J., & Ronald, R. (2010). Home ownership and asset-based welfare. *Journal of Housing in the Built Environment*, 25, 165–173.
- Europe, H. (2023). *The state of housing in Europe 2023*. Housing Europe.
- Forrest, R., & Murie, A. (1983). Residualisation and council housing: Aspects of the changing social relations of housing tenure. *Journal of Social Policy*, 12(4), 453–468.
- Förster, W., & Menking, W. (eds) (2016). *Das Wiener Modell. Wohnbau für die Stadt des 21. Jahrhunderts. The Vienna Model. Housing for the Twenty-First-Century City*, Berlin: Jovis.
- Friesenecker, M., & Kazepov, Y. (2021). Housing Vienna: the socio-spatial effects of inclusionary and exclusionary mechanisms of housing provision. *Social Inclusion*, 9(2), 77–90.
- Galster, G. C., & Friedrichs, J. (2015). The dialectic of neighborhood social mix: Editors introduction to the special issue. *Housing Studies*, 30, 175–191.
- Gibb, K. (2002). Trends and change in social housing finance and provision within the European union. *Housing Studies*, 17(2), 325–336.

- Gutheil-Knopp-Kirchwald, G., & Kadi, J. (2017). Housing policies and spatial inequality. Recent insights from Vienna and Amsterdam. In M. Getzner, D. van der Linde, & B. Unger (Eds.), *Public or private goods?* (pp. 175–196). Edward Elgar Publishing.
- Hamnett, C. (1984). Housing the two nations: Socio-tenurial polarisation in England and Wales, 1961–81. *Urban Studies*, 21, 389–405.
- Hernández-Morales, A. (2022). How Vienna took the stigma out of social housing. Politico, online, <https://www.politico.eu/article/vienna-social-housing-architecture-austria-stigma/>.
- Hoekstra, J. (2017). Reregulation and residualization in Dutch social housing: A critical evaluation of new policies. *Critical Housing Analysis*, 4(1), 31–39.
- Kadi, J. (2015). Recommodifying housing in formerly “Red” Vienna? *Housing, Theory and Society*, 32(3), 247–265.
- Kadi, J., & Ronald, R. (2014). Market-based housing reforms and the ‘right to the city’: The variegated experiences of New York Amsterdam and Tokyo. *International Journal of Housing Policy*, 14(3), 268–292. <https://doi.org/10.1080/14616718.2014.928098>.
- Meusen, H., & Kempen, R. (1995). Towards residual housing? A comparison of Britain and the Netherlands Netherlands. *Journal of Housing and the Built Environment*, 10(3), 239–258. <https://doi.org/10.1007/BF02496633>.
- Kemeny, J. (2006). Corporatism and housing regimes. *Housing, Theory and Society*, 23(1), 1–18.
- Klien, M., & Streicher, G. (2021). *Ökonomische Wirkungen des gemeinnützigen Wohnbaus*. WIFO.
- Kohlbacher, J., & Reeger, U. (2020). Globalization, immigration and ethnic diversity: The exceptional case of Vienna. In S. Musterd (Ed.), *Handbook of urban segregation* (pp. 101–117). Edward Elgar Publishing.
- Kössl, G., & Gutheil-Knopp-Kirchwald, G. (2021). Research Brief. Jahres-und Jahrzehntbilanz der Gemeinnützigen Bauvereinigungen (2010–2020). Vienna, GBV.
- Lux, M., & Sunega, P. (2014). Public housing in the postsocialist states of central and eastern Europe: Decline and an open future. *Housing Studies*, 29(4), 501–519.
- Malpass, P., & Murie, A. (1982). *Housing policy and practice*. Macmillan.
- Matznetter, W. (2002). Social housing policy in a conservative welfare state: Austria as an example. *Urban Studies*, 39(2), 265–282.
- McKee, K., Moore, T., Soaita, A., & Crawford, J. (2017). Generation Rent’ and the fallacy of choice. *International Journal of Urban and Regional Research*, 41(2), 318–333.
- Mundt, A. (2018). Privileged but challenged: The state of social housing in Austria in 2018. *Critical Housing Analysis*, 5(1), 12–25.
- Mundt, A., & Amann, W. (2010). Indicators of an integrated rental market in Austria. *Housing Finance International, Winter*, 2010, 35–44.
- Mundt, A., & Amann, W. (2018). Wiener Wohnbauinitiative—A new financing vehicle for affordable housing in Vienna, Austria. In G. van Bortel, V. Gruis, J. Nieuwenhuijzen, & B. Pluijmers (Eds.), *Affordable housing governance and finance in Europe: Innovations, new partnerships and comparative perspectives* (pp. 187–208). Taylor and Francis.
- Musterd, S. (2014). Public housing for whom? Experiences in an era of mature neo-liberalism: The Netherlands and Amsterdam. *Housing Studies*, 29(4), 467–484. <https://doi.org/10.1080/02673037.2013.873393>.
- Norris, M., & Byrne, M. (2017). Housing market volatility, stability and social rented housing: Comparing Austria and Ireland during the global financial crisis. UCB Geary Institute for Public Policy Discussion Paper Series, 2017/05.
- Norris, M., & Murray, K. (2004). National, regional and local patterns in the residualisation of the social rented tenure: The case of Ireland and Dublin. *Housing Studies*, 19(1), 85–105.
- NYT-The New York Times Magazine (2023). Imagine a Renter’s Utopia. <https://www.nytimes.com/2023/05/23/magazine/vienna-social-housing.html>. Accessed 23 May 2023.
- Oberhuber, A., Schuster, B. & Krampf, P. (2012). *Besiedlungsrechte der Gemeinden* [= Social housing allocation rights of municipalities]. Study commissioned by the Austrian Ministry of the Interior, Vienna: FGW.
- OECD. (2020). *Social housing: A key part of past and future housing policy*. OECD.
- OECD. (2023). New OECD Affordable Housing Database. Available at: <https://www.oecd.org/housing/data/affordable-housing-database/housing-market.htm>.
- OeNB (=Austrian National Bank). (2021). *Immobilien aktuell – Österreich. Die Immobilienmarktanalyse der OeNB Q2/21*. Vienna: OeNB.
- Ogrodowczyk, A., & Marcinczak, S. (2021). Market-based housing reforms and the residualization of public housing: The experience of Lodz, Poland. *Social Inclusion*, 9(2), 91–103.

- Pearce, J., & Vine, J. (2014). Quantifying residualisation: The changing nature of social housing in the UK. *Journals of Housing and the Built Environment*, 29, 657–675.
- Plank, L., Schneider, A., & Kadi, J. (2022). *Wohnbauboom in Wien 2018–2021*. AK Wien.
- Reinprecht, C. (2014). Social housing in Austria. In K. Scanlon, C. Whitehead, & M. F. Arrigoitia (Eds.), *Social housing in Europe* (pp. 61–73). Wiley-Blackwell.
- Scanlon, K., Whitehead, C., & Fernández Arrigoitia, M. (Eds.). (2014). *Social housing in Europe*. Wiley-Blackwell.
- Stephens, M., Burns, N., & MacKay, L. (2003). The limits of housing reform: British social rented housing in a European context. *Urban Studies*, 40(44), 767–789.
- Stirling, P., Gallent, N., & Purves, A. (2023). The assetisation of housing: A macroeconomic resource. *European Urban and Regional Studies*, 30(1), 15–35.
- Tunstall, B. (2021). The deresidualisation of social housing in England: Change in the relative income, employment status and social class of social housing tenants since the 1990s. *Housing Studies*, 38(5), 792–813.
- Turner, B., & Whitehead, C. (2002). Reducing housing subsidy. Swedish housing policy in an international context. *Urban Studies*, 39(2), 201–217.
- Van der Heijden, H. (2002). Social rented housing in western Europe: Developments and expectations. *Urban Studies*, 39(2), 327–340.
- Verwiebe, R., Haindorfer, R., Dorner, J., Liedl, B., & Riederer, B. (2020). *Lebensqualität in einer wachsenden Stadt: Endbericht an die Stadt Wien*. Universität Wien, Institut für Soziologie.
- Whitehead, C. (2017). Social housing models: Past and future. *Critical Housing Analysis*, 4(1), 11–20. Wohnberatung Wien. (2021). *Wiener Wohn-Ticket*. Available at: <https://wohnberatung-wien.at/wiener-wohn-ticket/allgemeines>.
- Williams, N. J., Sewel, J. B., & Twine, F. E. (1988). Council house sales: An analysis of the factors associated with the purchase and implications for the future of public sector housing. *Tijdschrift Voor Economische En Sociale Geografie*, 79, 39–49.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.