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Accelerating housing inequality: property investors and the changing structure of property ownership in Luxembourg

Mădălina Mezaroş[a,b] and Antoine Paccoud[a,c]

[a]Department of Urban Development and Mobility, Luxembourg Institute of Socio-Economic Research (LISER), Esch-sur-Alzette, Luxembourg; [b]Department of Social Sciences, University of Luxembourg, Esch-sur-Alzette, Luxembourg; [c]Department of Geography and Environment, London School of Economics and Political Science (LSE), London, UK

ABSTRACT

This paper tracks the arrival of investors in the housing market of Dudelange, Luxembourg. In so doing, it focuses on the socio-economic changes accompanying the transformation of homes into assets, since the first apartment was built in the city in the mid-1960s until 2018. Drawing on complete land registry data, we chart the structure of apartment ownership in the context of the city's transition from an industrial to a financialised economy, with particular attention to three characteristics of buyers: age at purchase, country of birth and occupation. We investigate how homeowner characteristics have shifted over time in a context where housing policies have incentivised investor activity and demand. We highlight how three policies put in place in the early 2000s to encourage real estate investments seem to have strengthened the position of the group already most advantaged on the Luxembourg housing market: those born in Luxembourg and over 45 years of age. Given that this group has on average the highest median incomes and the highest homeownership rates, we argue that these policies that incentivised property investments are likely to have accelerated housing (and wider) inequalities in an overheated housing market.

KEYWORDS Property wealth; homeownership; housing inequality; policy

Introduction

Homeownership is socially constructed as the 'tenure of choice' and has become an adulthood goal in economies where housing is increasingly unaffordable (Christophers, 2021). The loss of social housing (Byrne, 2020; Hochstenbach et al., 2021; Pawson & Martin, 2021) and the financial instability experienced by younger generations, which has complicated access to credit (Lennartz et al., 2016), have caused a surge in the increasingly

CONTACT Mădălina Mezaroş Madalina.Mezaros@liser.lu

deregulated private rental sector (Hulse & Yates, 2017; Pawson et al., 2017). In this context, the financialization of housing markets and the rise of investors played an important role in the rise of 'generation rent' and in the growing divide between the 'housing rich' and the 'housing poor' (Mckee et al., 2017). To understand this situation, it is necessary to adopt an asset-based class scheme, that is, to go beyond owners and non-owners and to look at the distinction between homeowners and multiple property owners (Adkins et al., 2021). While widening access to homeownership in the post-war period created a 'wealth middle class' (Hamnett, 1999; Piketty & Saez, 2014), a movement of property wealth re-concentration is underway as a subset of financially advantaged homeowners draw on supportive political and regulatory contexts to further accumulate property wealth (Arundel & Ronald, 2021; Dewilde & Flynn, 2021).

We situate this article in the growing literature on the socio-economic consequences of property investor activity on the housing market. While this work has so far been concerned with these impacts at the level of the users of place—be it buy-to-let gentrification (Paccoud, 2017), un-homing public housing communities through displacement (Elliott-Cooper et al., 2020) or investification (Hulse & Reynolds, 2018)—we are here concerned with how the arrival of investors affects the characteristics of the owners of place. We thus investigate the following question: how did the profile of property buyers change in a context where policies stimulate housing purchases not only for first-time buyers, but also for investors? We explore these issues in Luxembourg, which is experiencing rapid population growth due to immigration and an increasingly constrained housing market experiencing strong and sustained price growth. While homeownership is dominant in the country—given the lack of better, cheaper alternatives from the public or private rental sector (Dewilde & Lersch, 2015), there is a high rate of secondary property ownership—22%—(Wind et al., 2020), a loosely regulated rental market and a near absence of social housing. Moreover, Luxembourg has experienced one of the fastest house price increases in Europe in the last decade and can serve as an example in understanding the current changes in the European housing market.

Our case study, the city of Dudelange in southern Luxembourg, serves as a laboratory to survey the changes in Luxembourg's housing situation. We draw on detailed demographic and socio-economic information for all Dudelange apartment buyers from the 1960s, when the first apartment buildings were built, to 2018. This complete land registry dataset makes it possible to view the evolution of apartment buyers over time, and with respect to three key dimensions: age at purchase, country of birth and occupation. The city can be considered an outer suburb of the capital as it is within a reasonable commuting distance to it and the housing prices, inferior to Luxembourg City, have sustained consistent growth over time.

The next section discusses the recent literature on homeownership and on the development of property wealth inequalities, followed by a presentation of the Luxembourg context. We then present the data source and the analytical strategy the paper will follow. The empirical section starts with an evaluation of the share of investors (those owning more than one property in Luxembourg at the time of purchase) among recent buyers. We then use the full period of observation to investigate the capture of the Dudelange new apartment market by those who share the characteristics of recent investors: those born in Luxembourg over the age of 45. These shifts point to the key role of a series of policies incentivising property investments introduced in the early 2000s, which have created opportunities for property wealth accumulation for those already most advantaged in terms of income and access to housing. We position the Luxembourg case study as a cautionary tale for policy makers tempted to incentivise rental investments in order to increase housing supply. These policies seem to have consequences for the broader structure of homeownership. Our analyses point to a growing share of investors among buyers of new apartments, which seems to exclude younger households from property ownership.

The socio-economic impacts of the distribution of property ownership

In Western societies, the ideology of owning a house is encouraged economically and socially so that homeownership remains a target for individuals to achieve (Christophers, 2021). Advantages to homeownership are mainly fiscal, expressed through policies like the UK's right-to-buy or with attractive mortgages, lower interest rates and tax reliefs. As a consequence, other tenure types become secondary. In many Western countries, social housing is abandoned or not properly funded (Hochstenbach et al., 2021), while the private rental sector is increasingly deregulated. There are cases where certain groups are above the income threshold for social housing, yet private rental remains unaffordable, leaving them without much choice (Hochstenbach & Ronald, 2020). The need for flexibility, the lack of assets for purchasing, together with the decline in the supply of social housing, increase private rental demand (Kemp, 2015).

The rise in the private rental sector is a direct result of property accumulation by landlords with existing assets and the lack of possibilities for ordinary individuals to keep up with the surge in prices (Byrne, 2020). Rising private renting can cause socio-economic change, such as when educated young adults rent these properties for the short term during transitional phases in disadvantaged areas (Van Criekingen, 2009). Given the preference for low value property with a better appreciation over time, it is possible that the tenant chosen by the investor is wealthier than the neighbourhood average (Paccoud, 2017). Even without triggering social change, property investment can have distributional effects: the case of investification in Australia shows how property investment increases prices and rents amidst persistent disadvantage, as investors chase rental yields (Hulse & Reynolds, 2018). Owning housing assets can thus contribute to social change at a neighbourhood level, especially when landlords have a good market knowledge and live in the same city (Hochstenbach et al., 2021).

What has been less studied are the impacts of property investor interest on the socio-economic and demographic profile of buyers. Clear lines of stratification are visible here, such as those linked to age, occupation or country of birth. Urban studies, and gentrification studies in particular, focus on the occupants and users rather than the owners of place (those who benefit from housing as an asset class). There is little information available on who the investors are; instances of super-gentrification indicate that individuals work in the financial industry (Lees & Butler, 2006), however no distinction between owner and multiple property owner is made. We therefore use the distinction between investors, owners and users to concentrate on those who profit from the dwelling, be it in the form of rent and/or of increasing capital values. The investors or the new comers in a neighbourhood might differ from the existing population. This can be through class, gender, ethnicity, occupation, fortune or education (Lees & Butler, 2006; N. Smith, 1987). We draw inspiration here from the work of Christophers and O'Sullivan (2019) in Sweden who analyse the intersection between country of birth and parental tenure for homeowners and observe that the Swedish-born rank higher in homeownership rates than those born elsewhere. This is echoed in Wind and Hedman (2018) who show that housing wealth inequalities between Swedes and migrants in terms of housing wealth are sharpening. A big influence on homeownership trends is parental tenure: the chance of attaining homeownership did not diminish from one cohort to another for the Swedish-born with parental owners, contrary to those with parental non-owners where a decrease was registered (Christophers & O'Sullivan, 2019). Similar results have been reported in the UK: young people are exposed to higher housing risks if the parental household is disadvantaged socio-economically, while migrants are more likely to rent (Coulter, 2018). This creates important inter- and intra-generational discrepancies, leaving younger generations with less equity (Arundel, 2017).

Owning a house is thus no longer a stepping stone towards adulthood, but rather a growing divide between those who can afford the purchase and those who cannot. Adkins et al. (2021) go a step further to highlight the inequalities that arise within homeownership and tenant classes. The ability of certain groups to accumulate housing over and beyond their main residence creates inequalities within the ranks of homeowners (S. J. Smith, 2015). Research thus increasingly focuses on the distribution of housing assets, including within the top tail of the property wealth distribution (Paccoud, 2020). Property investment, by drawing on high incomes and access to credit, indeed serves both to build property wealth and to secure revenue streams. Over time, this can lead to homoploutia, a phenomenon coined by Milanovic (2019) to describe the increasingly frequent situation in which the same households combine high capital and high labour incomes. This situation is '*the product of either capital-rich people acquiring high levels of education and earning high wages, or of high-wage earners saving portions of their salaries and becoming rich capitalists*' (Milanovic, 2019, p. 35). It contrasts to previous times, in which different types of individuals (i.e. entrepreneur vs. rentier) occupied the top of the income and wealth distributions.

The development of multiple property ownership (Kadi et al., 2020) can thus be seen as one of the mechanisms through which homoploutia is developing in Western countries. This development relies on private property wealth accumulation strategies either facilitated by public policies or enabled by rental deregulation and fiscal advantages. Both Irish and UK governments encourage the construction of Build-to-Rent apartment buildings. In Australia, property investors draw on tax deductions, such as 50% discount taxation of capital gains and no taxation for interest costs (Hulse & Yates, 2017). The Netherlands has mortgage interests tax deductions for homebuyers and does not tax rental revenue (Hochstenbach & Arundel, 2021; Hochstenbach & Ronald, 2020). Even without governmental support, Australian private actors invest heavily in Build-to-Rent residences (Nethercote, 2020). In Austria, investment products enable the sale of whole apartment buildings (Aigner, 2022). Property concentration in the hands of investors is partly a result of such measures and leads to increasingly unequal housing distributions. The case of Luxembourg, to which the paper now turns, can shed some light on the ways in which the increasing presence of investors, likely a result of the introduction of housing and fiscal policies encouraging rental investments, can affect the structure of property ownership more generally.

Luxembourg and the high-speed track to property investment

In early 2021, Luxembourg had 634,700 inhabitants, out of which 299,400 were non-nationals (47%). Of the active population, almost half (46%) are cross-border workers (STATEC, 2022). The country's population has more than doubled since the 1980s, as the country has shifted from an industrial to a financial economy. The country is now a 'globalised micro-metropolis' (Hesse, 2016), a highly connected hub for global services, financial flows and an EU tax haven. Given the country's small size, migration has been important throughout its history: qualified workers for its steel industry in the first half of the twentieth century, and more recently international knowledge workers. High population growth has put pressure on the country's housing system. Recent data shows a need for 6,500 dwellings each year, whereas only 2,800 new dwellings are produced annually (OECD, 2020). The creation of new housing is complicated by the structure of landownership. Indeed, land is overwhelmingly in private hands and its distribution among these owners is very concentrated: 0.5% of residents own half of all residential land (1,865 from 3,732 hectares), while 10 developers own half of the land owned by companies (328 from 660 hectares) (Observatoire de l'Habitat, 2021b). With very little land owned by the state, the production of housing is intertwined with private land-based wealth accumulation strategies (Paccoud et al., 2021).

The essentially private provision of housing has gone hand in hand with heavy support for homeownership, with the aim of ensuring that the majority of residents become the owners of their own home. This explains the extent of the ownership bias in housing and fiscal policies. A recent analysis of the distributional impact of these subsidies by the Housing Observatory highlighted that they most advantage those among the top income quintiles, and especially those who receive income from rent (Observatoire de l'Habitat, 2022). This is because only 2% of the total housing stock is rented below market rate and the housing subsidies available for private tenants represent a small fraction of the payments and deductions that benefit homeowners and investors. Indeed, the latter two types of recipients can benefit from interest rate subsidies, tax deductions on loan interests, low property taxes, tax credits for notary costs for the first purchase, premiums on acquiring or constructing housing, reduced VAT for construction or renovation works and an exemption from imputed rent. Additionally, investors can benefit from tax deductions on rental income. The strong incentives available for property investors emerged as part of an attempt to stimulate housing production: it was thought that the increased demand linked to the arrival of investors would lead to an increase in the supply of housing (Government of Luxembourg, 2002). However, what seems to have happened is that developers redirected existing supply towards investors. The rest of the paper will provide some evidence of the impacts of this housing strategy on the structure of apartment ownership. In so doing, we are particularly interested in the combined effect of three policies that were at their most incentivising of property investments between 2002 and 2014. These policies, with their timings represented in Figure 1 below, are the following:

- First, for apartments bought off-plan, the transaction tax is paid only for the land because the construction has not started, hence a price reduction and encouragement for individuals to opt for new buildings. This policy was put in place in 1976 and remains in effect today.
- Second, there is an 'accelerated depreciation' for the first years of a newly built buy-to-let property's life, which generates a negative net rental income, thus allowing tax savings. This policy was introduced in 1991, but was made more advantageous in 2002 (the rate raised from 4% to 6%, and for a duration of 6 years instead of 5). In 2021, it was scaled back to the 1991 values.[1]
- The third is the fact that the purchase of a new flat with a view to renting it out incurs the same level of VAT (3%) as a purchase by a future owner-occupier. This policy was in effect between 2002 and 2014, with rental investments now taxed at the ordinary 17% VAT.

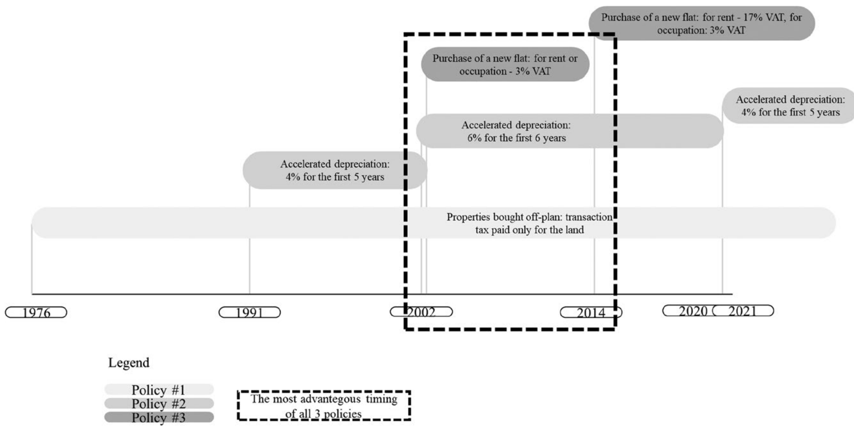

Figure 1. Timeline of fiscal policies.

This made the 2002–2014 period the most fiscally advantageous for rental investments. Through the case study of Dudelange, we place the timing of these policies in the context of the evolution of housing prices and of changes in the social stratification of apartment buyers. Dudelange is the 4th most populated city in Luxembourg (21,583 inhabitants in 2022, with roughly 40% non-nationals). The city is in the south of the country, but only 20 kilometres away from the capital city. Previously one of the country's main centres of steel production, it has since become a sought-after residential location for those working in the capital and in the country's second city of Esch-sur-Alzette. Homeownership in the city has remained stable since the early 1990s, after a period of increase between 1960 and 1991 (from 50% to 70%). In the 2011 census (the latest available), 73% of Dudelange residents were homeowners, in line with the country average. Dudelange as a case study can serve as a good representation of the housing market changes that have occurred in Luxembourg in the last decades, between the drastic developments in the capital city and the slower rate of change in the North and West of the country. Moreover, the changing structure of homeownership in Dudelange presents evidence of the unaffordability of the housing market not only in big cities—in Luxembourg and beyond—but also in small urban post-industrial places.

Analytical strategy and methodology

We draw on data from notarial statements archived at the Luxembourg Land Registry. This data has been used to analyse the current-day distribution of housing wealth in Dudelange (Paccoud, 2020), as well as to examine the role of landowners and developers in the production of unaffordable housing in Luxembourg (Paccoud et al., 2021). These records contain every notarial transaction pertaining to property, enabling the analysis of the evolution of the entire stock of land and housing units. The notarial statements contain socio-economic information on the buyer (date and place of birth, occupation and gender) and data on the transacted dwelling: exact location, price and size. While the information on the property transacted is always complete, some of the socio-economic information might be missing on a given transaction. To ensure the dataset is as complete as possible, we looked for the missing information in the complete database of all property transactions and in complementary data sources. The data runs for 5 decades, from 1969 to 2018. It is important to highlight that the data does not provide information on the users (e.g. tenants), but only on the owners of property in Dudelange.

In this article, we use this dataset to study the structure of the consumption of apartments and its evolution over 5 decades in Dudelange, with the aim of charting the changes that occurred in this structure from the early 2000s in the context of increased investor demand for housing. We restrict the analysis to apartments for a number of reasons. First, the transactions data provides more precise information on apartments than houses. For example, the surface of an apartment is precisely recorded, whereas only the size of the land plot is given for houses. Second, while the city has roughly 4,500 houses and 3,600 apartments (Paccoud, 2020), the production of single units has dropped in the past decades, with apartments representing 73.2% of new housing in Dudelange between 1992 and 2018. Finally, we argue that apartments represent the stepping stone for someone's housing trajectory but also an easier property asset to invest in, thus the place we are most likely to catch variations in the ownership structure. We focus on the first generation of buyers, that is, those who purchased new flats in new buildings.

We have distinguished apartment buyers by country of birth, occupation and age at purchase. For country of birth, we distinguish between those born in Luxembourg and those born outside the country. The occupations of the buyers were individually coded by the authors according to the ISCO classification, which takes into consideration the work performed in a given job. The occupations are categorised in 10 classes, going from high to low status and responsibilities. We grouped the ISCO occupations into three categories of high, medium and low status and responsibilities, respectively: professionals and managers, skilled workers and unskilled workers. We added a fourth category for those retired or with no declared occupation.[2] The age at purchase is divided into two groups: those below and over 45 years of age at the time of purchase. This threshold was chosen because it is the average age of homeowners with a mortgage in Luxembourg today (Observatoire de l'Habitat, 2021a), which proxies the age of new buyers. Since we are focussing on age at purchase over time, we highlight the change between individuals at a similar age but in different cohorts (Myers, 1999).

Over the study period (1969–2018), there were 2,870 transactions of new apartments completed by individuals. Transactions performed by companies, by more than two buyers without a direct connection (family or spouse) and other types of transactions (emphyteutic leases, donations or auction sales) were excluded (n = 328). Among the 2,870 buyers, 99% have indicated an occupation, 98% their date of birth and 90% their country of birth. On aggregate, 60% of the buyers bought the property alone. The cases with two buyers are usually spouses, and out of those transactions, 49% of the couples had only one working spouse. In cases with two working spouses, we included only the characteristics of the individual with the highest ISCO (spouses generally have similar backgrounds in terms of country of birth and age).

The analysis that follows is divided into four parts. First, we present evidence that investors make up a large portion of recent apartment buyers in Dudelange (2012–2018), and identify their main characteristics. Using the full period, we then map the arrival of individuals with investor-like characteristics on the housing market and link this trend to the timing of policies incentivising property investments. In a third step, we use the revealed preference of investors for large developments to track the differential impact of investors on the age and country of birth characteristics of buyers over time. The final step brings in the data on the occupations of apartment buyers to identify the changes following the arrival of investors on Dudelange's housing market.

The arrival of investors and the changing structure of apartment ownership in Dudelange

The weight of investors in recent apartment purchases in Dudelange

The Luxembourg housing market is as stratified as its population. In both cases, there are two clear lines of division: that between the young and the old, and that between those born in the country and those who were born elsewhere. The intersection of these two dimensions produces four population groups of roughly equal demographic weight. The 2011 population census (the most recent available) shows that 31% of the population is both over 45 years of age and born in Luxembourg, 25% is between 20 and 45 years of age and born elsewhere, while the other two categories make up roughly 21% of the population each (STATEC, 2022).

Though they represent broadly similar portions of the adult population in the 2011 census, these four categories differ in terms of their purchasing power. According to Eurostat's (2021) Survey of Income and Living Conditions (EU-SILC), in 2019, the median equivalised net income for Luxembourg-born individuals over 55 was 45,568 euros, compared to 38,902 euros for the Luxembourg-born between 18 and 54. These two groups have higher incomes than those born elsewhere, no matter the age category: 35,790 euros for those over 55 and 31,988 euros for those between 18 and 54. The relative positions of these groups are the same with respect to housing. Table 1 draws on the same Eurostat dataset to link these categories to rates of homeownership for 2007 and 2019. At both time-points, there is a similar pattern: those born in Luxembourg of all ages are more likely to be homeowners than those born elsewhere, and those who are in the older age group are also more likely to be homeowners in both country of birth groups. Between 2007 and 2019, the EU-SILC information shows an increase in rates of homeownership only for those born in Luxembourg and over 55 years of age (Eurostat, 2021).

Table 1. Owners of main residence by broad age and country of birth groups (EU-SILC).

		Homeowners (%)	
Country of birth	Age	2007	2019
Luxembourg-born	18–54	86%	81%
	55+	88%	92%
Elsewhere-born	18–54	54%	53%
	55+	71%	69%

Source: Authors, based on Eurostat (2021).

We find a similar structure in the Dudelange apartment market: between 2012 and 2018, 53% of purchases of new apartments were by individuals born in Luxembourg and over 45 years of age. We are however able to go one step further and to identify the importance of investors among these buyers. We define investors as those who owned more than one housing unit at the time of acquisition in the country. We find a high interest of investors for new apartments in Dudelange: they acquired 46% of the 384 apartments sold between 2012 and 2018 in the city. This is higher than the country average of 40.4% of apartments sold off-plan purchased by investors between 2015 and 2021, as indicated in the answer to a recent parliamentary question.[3] Our data thus confirms the importance of the country's post-industrial south for investors, as highlighted in that same answer: after the capital and its surroundings (45% of total investor purchases), the south of the country has the second highest share of investor purchases (28%). This large interest from investors marks quite a change for Dudelange, in which less than a quarter of residents were private sector tenants in the 2011 census. It is possible that investor attention on Dudelange results from its position as a suburb of Luxembourg City, as buying in suburbs results in higher rent yields for investors than acquiring property in very central locations (Pawson & Martin, 2021). We also find that investor purchases concentrate in residential developments of more than 10 apartments.[4] In these 'large' developments (LD; n = 234), 54% of buyers were investors, compared to 35% in the developments of less than 10 units (SD; n = 150).[5] This is in line with research that shows that build-to-rent developments tend to be high-volume (Nethercote, 2020).

The majority of investors in Dudelange apartments are from among the ranks of those in the most advantageous position on the Luxembourg housing market: 65% of all investors in Dudelange were born in Luxembourg and over 45 years of age. Given their very high rates of homeownership, and their high incomes, we posit that this category of the population was best able to draw on the fiscal schemes incentivising rental investments. The fact that their demand concentrates in LD makes it possible to compare the characteristics of buyers across developments of different sizes over time, and to provide some insights into the way in which this new demand affects the structure of apartment ownership and the characteristics of buyers over time. To do this, we move in the next sections to the full set of apartment transactions in Dudelange to track the evolution of buyers similar to those we have identified as investors in the last period.

The capture of a local housing market

Given the lack of historical data that precisely identifies investors before 2012, we focus more broadly on the increasingly predominant role of Luxembourg-born individuals over 45 as buyers of new apartments over the last decades. Figure 2 maps every apartment building built in the four decades since the 1980s,[6] and identifies the type of buyer that purchased the majority of apartments in these developments.

The maps show a clear evolution in the profile of apartment buyers in Dudelange over four decades. Until the 2000s, buyers under 45 predominate in the purchase of new apartments, both in the city centre and in the rest of the city. An important land release occurred in the 1990s, allowing the construction of large developments across the city, thus making it more possible for those under 45 to purchase in all types of developments. From 2000s onwards, the trend reverses: Luxembourg-born buyers over 45 are increasingly the majority in large and centrally located developments, while younger buyers and those not born in Luxembourg tend to be the majority only in smaller and more peripheral buildings. This finding echoes the results from Hochstenbach et al. (2021) from the Netherlands, where investors occupy the central locations, displacing homeowners towards the periphery. There is also a parallel increase in off-plan purchases: from the 1980s onwards, the majority of apartments are sold off-plan, with a peak in the 2010s (68%). Additionally, off-plan purchases in LD represented 92% of the total number of acquisitions in the 2010s, whereas in SD they were only at 50%.

The timing of these shifts seems to correspond with the introduction of the three policies encouraging rental investments described in the third section. These policies were at their most incentivising for rental investments from 2002 to 2014. It is thus possible that the capture of the majority of new and centrally located apartments by the Luxembourg-born over 45 from the early 2000s occurred through investment-related purchases. This is especially likely for LD, where off-plan purchases were the norm and in which we today find the greatest proportion of multiple property owners.

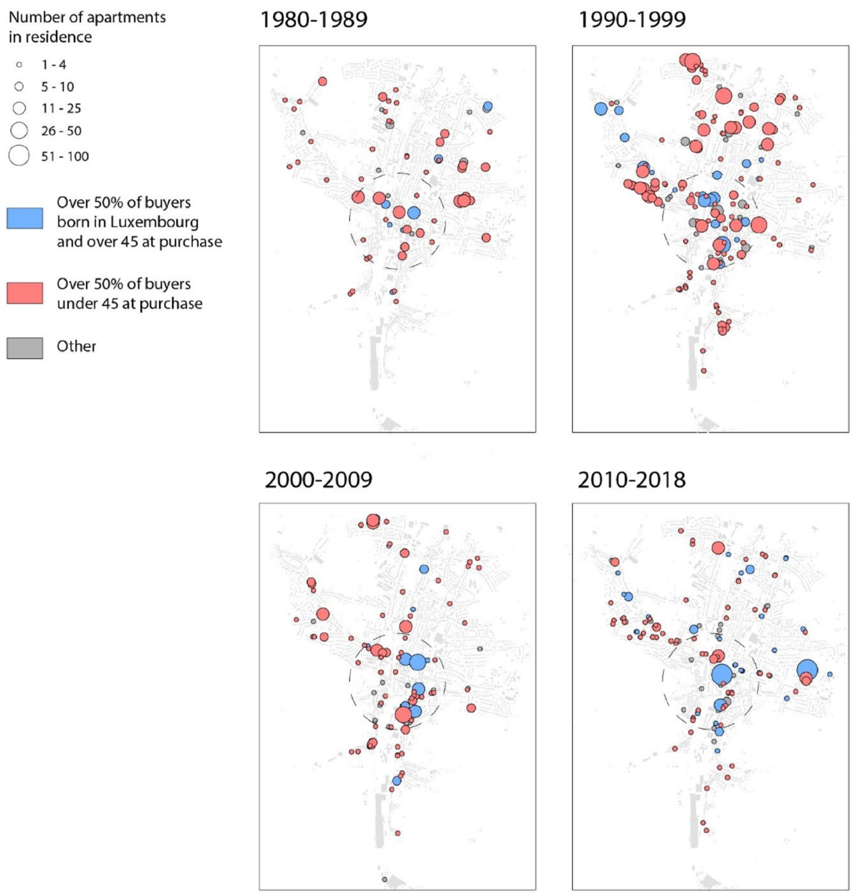

Figure 2. Spatial distribution of buyers by age at purchase and country of birth in Dudelange (city centre in dashed circle).

We now provide a more detailed description of the effects of this housing market capture on the overall structure of apartment ownership.

Changes in the structure of apartment ownership: country of birth and age

After having established the presence of investors in Dudelange in the late 2010s and the increasing dominance of older, Luxembourg-born buyers from the 2000s onwards, we examine in more detail the way in which buyers with the identified investor attributes—Luxembourg-born over 45—are distributed with respect to the size of the development they purchased in. To do so, we divide the transactions into large and small developments, with an almost equal number of transactions: 1,370 purchases in 82 LD and

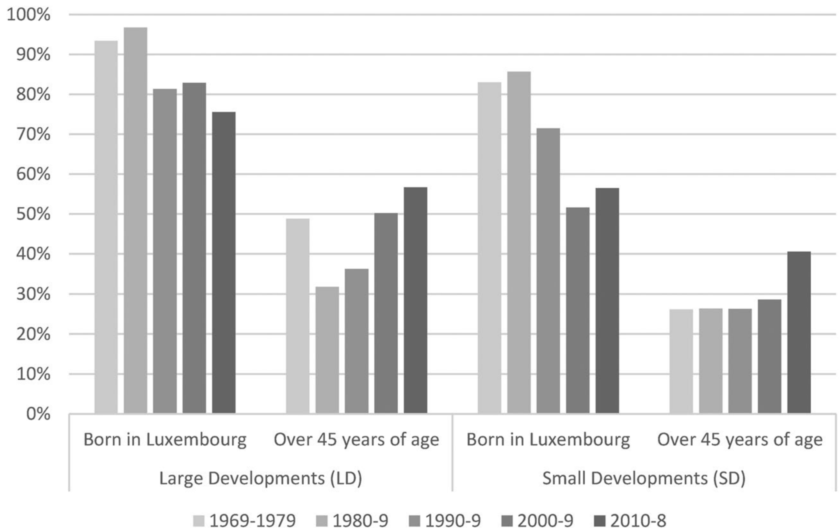

Figure 3. Country of birth and age at purchase in large and small developments.

1,500 in 428 SD. Figure 3 shows the evolution of those born in Luxembourg and of those over 45 years of age from 1969 to 2018 in LD and SD.

Focussing on the country of birth dimension first, we find that in LD, Luxembourg-born buyers represent the vast majority across all time-periods, with a small increase in buyers born elsewhere in the last three decades (up to about 20%). In SD, the number of buyers born outside Luxembourg has increased more rapidly since the 1990s, and they amounted to close to half of all buyers in the last two decades. Even with recent increases in buyers born elsewhere in both types of development, there remains a stark difference between LD and SD in terms of the relative proportion of buyers born in Luxembourg and elsewhere.[7] To contextualise these figures, it is important to note that between 1995 and 2020, those born outside Luxembourg represent 87% of new population growth: there was an increase of 163,200 people over 15 years of age in that period born outside of the country, as compared to an increase of 19,600 people over 15 born in Luxembourg (Eurostat, 2021). What is most striking in such a context is the fact that the proportion of those born in Luxembourg seems to have stabilised in both LD and SD in the last two decades. This points to increasing barriers to entry for those not born in Luxembourg. As concerns age at purchase, there is an important increase in the proportion of those over 45 in the last two decades in both types of development. Buyers in LD have always been older on average at time of purchase, and there is a larger increase in individuals over 45 in LD as compared to SD, where it is only in the last decade that there has been a significant shift in the age profile at purchase (with an increase of more than 10 percentage points).

Taken together, the country of birth and the age dimensions show that the last two decades have seen a halting of the trend towards more diversity in the country of birth profile of new apartment buyers, as well as an increasing proportion of older buyers, across both types of developments. In LD, the stabilisation in terms of country of birth has occurred at much higher levels (75% of Luxembourg-born buyers) and the proportion of those aged over 45 has increased more quickly and to higher levels than in SD. This occurs in a context where housing policies do not discriminate or advantage a population over another and where groups by age and nationality are similar in size. This phenomenon is not linked to differences in terms of the number of buyers in a transaction between those born in Luxembourg and those born elsewhere. Table 2 compares the prevalence of Luxembourg-born single buyers to that of those born elsewhere and likewise buying alone, as well as the prevalence of couples[8] where both partners are Luxembourg-born and of couples where both individuals are born elsewhere. The figures confirm the large difference between LD and SD in terms of the country of birth profile of buyers in the last two decades.

Across both time periods, the Luxembourg-born predominate among single buyers, but this is much more pronounced in LD than in SD. In the last decade, for example, there was a 31 percentage point difference between Luxembourg-born single buyers and single buyers born elsewhere in LD, compared to a 14 percentage point difference between these two groups in SD. The picture is the same for buyers that are couples. Couples with both individuals born in Luxembourg predominate in LD, while the situation is more balanced in SD. This points to the fact that for those born elsewhere, only couples buying in SD are able to compete with Luxembourg-born buyers. These changes in the housing market are not driven by changes at the level of households: the household structures of the Luxembourg-born and of those born elsewhere have proved stable,

Table 2. Distribution of buyers in large and small developments according to their number and country of birth.

	2000–9		2010–8	
	Large developments (LD)	Small developments (SD)	Large developments (LD)	Small developments (SD)
Single Luxembourg-born	52%	31%	44%	35%
Single born elsewhere	8%	14%	12%	22%
Couple Luxembourg-born	22%	19%	27%	18%
Couple born elsewhere	8%	29%	8%	17%
% point difference single buyers Luxembourg-born/born elsewhere	+44%	+17%	+31%	+14%
% point difference couple buyers Luxembourg-born/born elsewhere	+15%	−10%	+19%	+1%

with similar slight increases in single-person households in the last two censuses (2001 and 2011) (STATEC, 2022). This thus points to an advantage for Luxembourg-born individuals on the housing market that might come from their income position.

Changes in the structure of apartment ownership: occupational upscaling

The changes we have highlighted so far—the increasing weight of those born in Luxembourg over 45 years of age at the time of purchase in the last two decades among new apartment buyers—occurred as Dudelange transitioned from a relatively self-contained industrial settlement into a commuter suburb of the country's financial centre and capital city. During this transition, population change occurred mostly through the addition of new residents not employed in industry, linked to rapid population growth (from 14,254 in 1990 to 21,583 inhabitants in 2022) (STATEC, 2022). In such a context, it is not surprising to find occupational upscaling among the buyers of new apartments. This upscaling can clearly be seen in Figure 4 below, which describes the evolution of the occupations of buyers across LD and SD for the five decades. We focus on categories of high and medium status and responsibilities: professionals and managers (ISCO categories 1, 2 and 3) and skilled workers (ISCO categories 4, 5 and 7); unskilled workers are not shown due to the small proportion of apartment purchasers they represent (an average of 4% across periods and developments). We include individual and couple buyers. Couples were included

Figure 4. Occupational changes amongst buyers in large and small developments.

among professionals and managers if at least one of the two buyers had an occupation from ISCO categories 1, 2 or 3, with the same criteria applying to skilled workers (at least one of the two buyers among this group).

Figure 4 indeed shows that occupational upscaling is occurring in both LD and SD since the 1990s, which is congruent with the timing of Dudelange's deindustrialisation. What is interesting here is the fact that the buyers in LD have historically been more likely to be professionals and managers than those in SD and that occupational change in LD has occurred more quickly than in SD. Over the five decades studied, the ratio between professionals and managers and skilled workers has reversed in LD: in the first period studied, 50% of buyers were skilled workers and just above 30% were professionals and managers, while in the last period 30% of buyers are skilled workers and 50% are professionals and managers. In SD, both classes currently have the same proportion of buyers, a situation that was reached one decade earlier in LD. Given the relative stability of the number of skilled workers in the city until recently, most of the occupational change thus seems to have occurred through the arrival of higher ISCO populations.

The fact that a shift from medium to high status and responsibility jobs has occurred more strongly in LD, the same type of building on which investor activity is concentrated, points to the likely development of homoploutia through apartment purchases in Dudelange. Investors are one component of demand within a general movement of occupational upscaling, and as such seem to draw on labour income to the same degree as other types of buyers. Through the development of homoploutia, investors can nonetheless also mobilise accumulated wealth to magnify income streams. This in turn suggests that the demand for apartments by investors requires first time purchasers to have increasingly higher occupations in order to keep up. Homoploutia thus widens the gap between first time buyers and investors, even in a context of a generalised occupational change of apartment purchasers.

Discussion and conclusion

In this article, we investigated changes in the structure of property ownership in a context where housing policies encouraged the access to housing not only for first-time buyers, but also for investors. Through a unique historical dataset, we were able to put together two timelines: that of the shifts in time of homeowner profiles and that of policies encouraging property investment. In addition to the already documented impacts on tenure structure and the profiles of tenants (buy-to-let gentrification, investification), these particular policies have an important impact on the structure of buyers. They can facilitate the transformation of the housing market into an important channel for the income-rich to accumulate housing wealth (i.e. homoploutia). The changes that occurred in Dudelange and undoubtedly in the whole country, should serve as a cautionary tale for policy makers who attempt to increase housing supply by incentivising property investments.

In a relatively short time, Dudelange has gone through significant transformations in its socio-economic composition, changes that are reflected in housing inequality. The analysis shows that Luxembourg-born individuals over 45 have gained a dominant position on the Dudelange apartment market, a change which coincides with the introduction of tax policies incentivising rental investments. In the first decades of analysis, buyers were predominantly young nationals, spread across the city. The appearance of purchasers over 45 occurred gradually throughout the city, with a preference for bigger developments, where apartments were largely sold off-plan. Country of birth is important in terms of access to property, as Luxembourg-born single and couple buyers are much more likely to purchase in large developments than singles and couples born elsewhere. Going a step further, we identify a next 'step' in the development of housing inequality: as those born elsewhere start to appear as buyers in smaller residences, the Luxembourg-born become multiple property owners and concentrate purchases in larger buildings. This phenomenon is occurring in the midst of a generalised occupational upscaling of Dudelange apartment buyers in the last three decades. This points to an increasing competition on the housing market since the arrival of investors, which complicates apartment purchases for those that are younger and not born in Luxembourg.

The timing of the introduction of three policies (low registration taxes for off-plan purchases, low VAT burdens for rentals and the accelerated depreciation rate)—at their most incentivising between 2002 and 2014—coincides with the changes we have identified in the occupational, country of birth and age profiles of buyers in Dudelange on the basis of property transactions. It thus seems that it is those who were already the most advantaged on the housing market who were best able to take advantage of these policies: those born in Luxembourg and of older age have the highest median incomes and the highest homeownership rates. This aligns with the finding that it is owners with high incomes who benefit the most from housing subsidies and tax advantages (Observatoire de l'Habitat, 2022). Put in place to encourage the production of housing through the stimulation of housing demand, these policies seem instead to have created a class of domestic property investors. Cognisant of these developments, recent governments have scaled them back: the VAT burden for rentals was brought back to the standard 17% in 2014 and the accelerated depreciation rate was made less advantageous in 2020. The effect of these policies might nonetheless endure, as a subset of households have since embarked on a property wealth accumulation trajectory. Buyers today are not in the top wealth *or* top income, but both. Rental investments thus seem to be an important channel of development for homoploutia. This leads to increasing competition on the housing market and complicates access to property for the younger generation. The snowball effect passes from one generation to another, bringing more imbalance and inequality between individuals with high incomes or access to inheritance, and the others. Given the findings of Bohle and Seabrooke (2020) that the shift to housing as an asset goes hand in hand with an increasing reliance on the family, more work is needed to identify the relative importance of family property wealth and high income in first and subsequent property investments. More work is also needed to follow the precise housing accumulation trajectories of particular cohorts over time.

Notes

1. This measure in particular caused concern for many professional associations, such as the Chamber of Trades and the Chamber of Employees. When the policy was scaled back in 2021, the chambers were of the opinion that the accelerated depreciation rate should be completely withdrawn as it provides undue advantage to investors over first-time buyers in an overheated housing market.
2. While age and country of birth are verified by the notary through ID cards, the occupation is declarative.
3. Parliamentary question 5374 (answered on 11/01/2022): https://www.chd.lu/wps/portal/public/Accueil/TravailALaChambre/Recherche/RoleDesAffaires?action=doQuestpaDetails&id=22693
4. Between 2012 and 2018, there was an average of 4.5 units per residence in Dudelange according to STATEC, the Luxembourg statistics agency
5. It is worth noting that there is only a small difference in the average price of units in these two types of developments, with units in smaller developments generally cheaper.
6. Each building appears only once, depending on the decade in which most of the apartments were purchased.
7. In the 1980s, there were 32 times more buyers born in Luxembourg as compared to those born elsewhere in LD, compared to 3 times more in SD. In the last decade, there were only 3 times more in LD and 1.3 times more in SD.
8. For couples we take into consideration three work scenarios: both individuals have a job, only one, or neither has a declared occupation in the notarial statement.

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ORCID

Mădălina Mezaroş http://orcid.org/0000-0003-2894-7426
Antoine Paccoud http://orcid.org/0000-0001-5446-7384

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