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Income Inequality and Access to Housing in Europe

Caroline Dewilde and Bram Lancee

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GROWING INEQUALITIES' IMPACTS

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Abstract

This paper analyses the relation between income inequality and access to housing for low- income households. Three arguments are developed, explaining how inequality might affect housing affordability, quality and quantity. First, it is the absolute level of resources, not their relative distribution, which affects access to housing. Second, inequality affects access to housing in different ways, due to rising aspirations and status competition. Third, the effect of inequality is mediated by housing market pressures. Multilevel-models for 28 countries indicate that: 1) there is no relation between inequality and housing affordability – the level of resources matters, rather than their distribution; 2) there exists a positive relation between inequality and crowding for owners; 3) higher levels of income inequality are associated with lower housing quality for owners and renters. Although there is a relation between inequality and access to housing, it is complex and not mediated by our indicator of house price-changes.

Key words: Income inequality, low incomes, housing conditions, comparative research, Europe.

1. Introduction

In *The Spirit Level*, Wilkinson and Pickett (2009) suggest looking into the relationship between income inequality, debt and changes in housing markets. They speculate that, as households at the higher end of the income distribution had more money to invest and to lend, it became increasingly difficult for people with fewer resources to realise their aspirations, leading to higher levels of indebtness.

Although the idea of a link between income inequality and housing outcomes is intriguing, the underlying mechanisms are manifold and complex. Trends in income inequality refer to relative changes between income groups. These might take place across the whole income distribution (e.g. the rich becoming richer, the poor becoming poorer), but might also be limited to part of the distribution, e.g. when the top groups experience disproportionate income growth, or when incomes at the bottom lag behind. The relationship between income inequality and housing outcomes can furthermore run through different mechanisms. For example, higher investment in property by more wealthy households could lead to changes in housing market dynamics and property prices. Does the 'conspicuous consumption' of the rich result in higher aspirations and status competition of less affluent households, 'tricking' them into spending more on housing, but improving on quality standards? Or is there rather a negative impact on the type and quality of housing that is available for a certain price?

We explore a number of these questions from a cross-sectional, yet comparative angle. We identify three mechanisms that link income inequality to access to decent housing: 1) the absolute level of resources; 2) rising aspirations; and 3) pressures on the housing market. After a brief inspection of the macro-level trends, we estimate multilevel-models in order to evaluate how income inequality is associated with access to housing. We use data from the 2009 *Statistics on Income and Living Conditions* (*EU-SILC*) for 28 countries.

We argue that income inequality, through its' supposed impact on housing markets, affects those in more vulnerable income and housing positions most strongly. We hence focus on the impact of income inequality on access to decent housing (affordability, quantity and quality) of *low-income* homeowners and private renters. As homeownership rates have increased over time, more lower-income households managed to become a homeowner. The relative size of the owner-occupied sector means that half of those living in poverty are homeowners (e.g. Burrows 2003). This holds for all European Union (EU) Member States, and it is strongest in Eastern Europe, where homeownership levels also tend to be higher following the mass privatisation of state-provided housing (e.g. Mandic 2010). Concerning the private rented sector, the 'residualisation' of social housing has meant that in many countries, a sizable part of the population on a low income is housed in this tenure, which is often characterised

by its insecurity and low quality in relation to housing costs (e.g. Beer, *et al.* 2011; Kemp 2011). As social housing outcomes are the result of specific policies and are governed by their own set of regulations, access to social housing is out of our scope.

2. How Income Inequality Might Influence Access to Housing for Low-Income Households

2.1. The institutional context: changes in housing regimes

In the late 19th century, most of the population in Western countries lived in private-rented dwellings, of low quality and at high costs (Fahey and Norris 2010). As the scope of the (welfare) state expanded, housing moved increasingly within the realm of public policy. While in some countries, owner-occupation was encouraged early on, in other countries public policy goals were realised through public housing. While homeownership rates continued to increase, in many countries governments cut back on direct housing provision, roughly since the 1970s. Several authors have shown how the relationship between housing markets, the welfare state and the larger economic environment has been restructured since (e.g. Beer*, et al.* 2011; Lowe 2011). In many countries, financial deregulation entailed the integration of mortgage finance in the global economy, which in turn became increasingly dependent on the performance of housing markets. Welfare states on the other hand are increasingly choosing to 'govern' the provision of housing for low-income households through a range of public and private intermediaries. Furthermore, the affluence of the babyboom cohorts entering retirement spurs debates on using their housing wealth for welfare needs (e.g. Doling and Ronald 2010). At the individual level, house prices have turned into a determinant of tenure, investment and consumption decisions.

While more households became owners, the costs of homeownership have increased, and so have mortgage debts (Horsewood and Doling 2004). More demand for and government support of owner-occupation led to house price inflation (OECD 2011), which then encouraged households to invest more in housing (including second homes and properties to let or resell). According to Shiller (2007: 34) house price developments in the United States (US) were caused by a '*classic speculative bubble, driven largely by extravagant expectations for future price increases*', reinforced by institutional changes.

Some argue that the shift towards owner-occupation is accompanied by an underlying 'ideology of homeownership' (Ronald 2008). At the state level, this ideology is inspired by neo-liberal policies aimed at shifting responsibility for their welfare onto households and individuals (e.g. Malpass 2008). At the individual level, this ideology has resulted in a 'financialisation of the self', turning the owner-occupied house from a basic need into an investment that allows for capital gains, which can finance other consumption (e.g. Smith, et al. 2008). Owner-

occupation has also become equated with *home*ownership, and with being a good citizen, parent and caretaker (for an overview, see Dietz and Haurin 2003).

2.2. Linking mechanisms

In recent years, a great deal of research has focused on the rise in economic inequality that seems to be characteristic of many welfare states since the late 1970s. According to the *Growing Unequal*-report (OECD 2008: 15), the trend is '*widespread and significant, but moderate*'. From the mid-1980s to the mid-2000s, the increase in the Gini-coefficient across 24 countries for which data are available is around 0.02 points, or 7%.

In this section, we discuss several causal mechanisms relating income inequality to access to decent housing for low-income homeowners and private renters. Firstly however, we need to define 'access to decent housing'. Recent studies on the link between housing regimes and inequality (e.g. Norris and Winston 2011) define housing outcomes in terms of tenure type, affordability (housing cost), quantity (crowding) and quality (housing problems). When confronted with affordability problems, households can adapt by reducing their housing consumption (Matlack and Vigdor 2008), i.e. by giving in to lower space or quality standards. Therefore, we look at three indicators: 1) problematic housing costs; 2) crowding; and 3) problems concerning housing quality. 'Restricted access to decent housing' hence refers to higher housing costs (less affordability), more crowding and less housing quality.

2.2.1. Mechanism 1: absolute incomes

In more unequal countries at similar levels of economic affluence, the absolute level of resources held by those at the bottom of the income distribution is lower than in more equal countries. For people at the bottom, these lower incomes might translate directly into restricted access to affordable housing of decent quality and quantity. These households have fewer resources at their disposal, and hence have to spend a higher proportion of their lower income on housing, or reduce their housing consumption accordingly. Furthermore, countries differ in terms of their 'absolute' level of economic development and affluence, which is associated to housing costs and standards. If a negative influence of income inequality is caused by the absolute level of resources, rather than the relative distribution of income, then the effect of inequality should disappear when controlling for the level of resources:

Hypothesis 1: In countries with higher income inequality, access to housing for low-income homeowners or private sector renters is restricted; the effect of income inequality disappears when controlling for household-level income and for absolute levels of economic affluence (e.g. GDP per capita; social expenditure).

2.2.2. Mechanism 2: rising aspirations

Wilkinson and Pickett (2009) argue that the negative impact of income inequality on societal outcomes not only runs through absolute incomes. What matters is that people are *relatively more unequal* to each other. In more unequal societies, comparing one's own situation to other people's results in anxiety, and lower levels of security and self-esteem. Larger differences between people trigger status competition and rising aspirations, resulting in a range of undesirable outcomes.

Several authors point out that a house is the largest consumption good that people purchase, providing them with an opportunity for both 'conspicuous' and 'emulative' consumption (Dwyer 2009; Ronald 2008). The house has become a tool for identity construction, and is indicative of one's social, personal and economic success and aspirations. According to Beer et al. (2011: 2), the 'want' function of housing has superseded the 'need' function; housing has become '*a commodity embedded with social, personal and economic meanings that can serve to encourage increased consumption regardless of real needs*'. The increasing (housing) affluence of the rich in more unequal societies might have pressed the middle and lower income groups into upgrading their perceptions about the type of housing that is required to live a good life, at the cost of overinvestment and increasing levels of debt – which was institutionally supported by mortgage deregulation. In a study on the consequences of rising income inequality on the stratification of 'McMansions' in the US, Dwyer (2009) finds evidence for both 'upgrading', 'convergence' and 'divergence' from the 1960s to the 1990s. Increasing income inequality is related to an upgrading in the size of houses at all income levels. This is attributed to an acceleration of the 'normal' processes of increasing housing standards and 'filtering' over time: as the more affluent move into bigger houses, their former homes are occupied by the ones below them. At the same time, the growth of 'big house'-ownership was clearly larger for the higher income groups (divergence). There is, however, also 'convergence', as the living standards of the 'merely affluent' became closer to those of the 'very rich'.

Following the argumentation of 'homeownership ideology' and rising aspirations', one would predict contradictory outcomes for low-income owners:

Hypothesis 2: In countries with higher income inequality, status competition leads to more affordability problems for low-income homeowners (because of larger mortgage costs), but to a *higher* quantity and quality of housing — controlling for absolute incomes of households and economic affluence at the country level.

It is unclear to what extent low-income renters are affected by such a process of relative status competition. For younger people, private renting is a temporary phase, for example because it allows them to save money for a deposit to become a homeowner (hence they might 'underconsume' when renting), or simply because it provides

more flexibility. For *low-income* private tenants (who are relatively 'poorer' than low-income owners), their housing history seems to be characterised by constraints rather than choice. Residential moves are frequent, but mostly due to external factors such as rent increases, job loss, and behaviour of landlords (see below) (e.g. Beer*, et al.* 2011; Kemp 2011).

2.2.3. Mechanism 3: pressures on the housing market

Apart from the 'self-representation'-function, it is also possible that people started to pay more for housing because it is seen as a good investment. As Shiller (2007: 36) notes, as long as people have '*the false impression that they a have unique property that is going to become extremely valuable in the future, then they may consume more*'. The idea that a higher level of income inequality might be related to the price of housing consumed by all, including the poor, has been suggested by Matlack and Vigdor (2008). A straightforward hypothesis is that as people at the top become richer, access to owner-occupied housing becomes more expensive for everyone. If more households aspire to homeownership and the richer part of the income distribution can afford higher prices, then house prices would tend to increase. This happens because the increased demand for owner-occupied housing is usually higher than the existing housing stock plus newly built houses – although the elasticity of new housing supply varies cross-nationally (OECD 2011). Furthermore, housing might not only become more expensive for everyone, but the higher demand for properties might 'eat into' other segments of the housing market, as the ownership segment itself becomes more crowded and as lower-income households look 'downwards' to more affordable properties.

For the US, Matlack and Vigdor (2008) find that in a context of a tight housing market and rising income inequality, the poor experience more crowding (i.e. consume less housing services), while more limited evidence supports the idea that increasing income inequality pushes up the price of housing for those at the top and the bottom (even controlling for changes in household income). Much is, however, dependent on the stratification of housing markets. If different income groups aim for different segments of the housing market, then rising income inequality might even *reduce* demand for the type of 'inferior' housing preferred by households on a low income (Matlack and Vigdor 2008), e.g. when the middle classes develop more 'distinguishing' housing aspirations (remember the 'filtering process' discussed in the previous section). Higher income groups might only enter the 'less attractive' market segments when their demand for owner-occupied housing is high and unmet. Finally, higher prices for 'less' housing do not have to result from a widening of the income distribution at the top. Other studies (e.g. Public Policy Institute of California 2001) have shown that decreasing incomes at the lower end of the income

distribution urge households to move out of better-quality housing and to enter the lower-end of the housing market, bidding up prices at the bottom.

The second argument states that the impact of 'relative' income inequality is not limited to competition and price trends on the homeownership market. If the demand for homeownership is high and house prices are steep, private landlords (in particular of low-quality housing) might decide that they are financially better off selling their rental property. One could thus imagine a situation where the owner-occupied sector 'invades' the private rented market, e.g. when gentrification attracts high-income households to deprived neighbourhoods containing housing stock that is attractive to renovate into family homes (e.g. town houses divided into separate private rented flats). Depending on rent regulations, such a process might limit the availability of affordable housing for low-income households with few other options. Recent research for Belgium (Albrecht and Van Hoofstat 2011) suggests that increasing house prices in the 'cheaper' segment of the market reduce the returns to investment in rental properties, compared to the profits that can be made when selling these properties. Hence, for high-income renters, owning became more attractive compared to renting. Low-income renters, however, usually do not have the financial means to allow for private landlords to upgrade their rents in line with increasing house prices. The combination of both factors leads to an 'impoverishment' of the supply of private rented housing for a more selective group of low-income households, both in terms of quality and in terms of value for money (the best properties are sold first and hence become part of the homeownership segment). The impact of house prices on private renting has also been investigated in the United Kingdom (UK), where the preference of landlords in regions with high house prices is towards shorter contracts for younger and richer people, making it easier to increase rents on successive contracts, or to sell the property altogether (Izuhara and Heywood 2003).

On the other hand, it has been suggested that high house prices might renew the housing stock available for private renting, as the rich invest their money in buy-to-let property – which is of higher quality, but more expensive and mainly aimed at accommodating students and young professionals (e.g. Kemp 2011) – such a process however would not benefit low-income households. Hypothesis 3 can thus be formulated as follows:

Hypothesis 3: In countries with higher income inequality, access to housing is restricted for low-income homeowners and private sector renters — controlling for absolute incomes of households and economic affluence at the country level. The negative impact of income inequality is mediated through pressures on the housing market.

Hypothesis 3 contradicts Hypothesis 2, except for the outcomes regarding housing affordability. Hypothesis 3 furthermore refers to the negative impact of income inequality on access to housing of low-income private sector renters, next to low-income owners. Note that we take account of the 'selectivity' of public renters in different countries through controlling for household income, as well as a range of other household characteristics.

3. Data and Methods

We test our hypotheses with data from the *Statistics on Income and Living Conditions* for 2009. *EU-SILC* is the official EU-source for the measurement of income, poverty and social exclusion. *EU-SILC* is coordinated by EUROSTAT and contains the Member States of the EU, Iceland and Norway (EUROSTAT 2009). The sample is a national representative probability sample of the population residing in private households within each country.

Since housing conditions are typically a household characteristic, our unit of analysis is the household. We made the following selections for our analytic sample. We selected all households that earn less than the 30th percentile-value of equivalised (1) disposable household income of the residence country. As the tenure situation, income position and life-style deprivation of older people differ substantially from the younger population (e.g. Dewilde and Raeymaeckers 2008), we exclude households where the oldest household member is 65 years or older. As stated before, our analyses concern low-income homeowners and private sector tenants. A drawback of *EU-SILC* is that the distinction between the private and the social rented sector is blurred. Private renters are households renting their accommodation 'at prevailing or market rate', even when the rent is wholly recovered from housing benefits or other sources. However, in countries where there is no clear distinction between a 'prevailing rent' sector and a 'reduced rent' sector, all renters are classified in the former category, as in this case the concept of 'reduced' rent has no empirical meaning (EUROSTAT 2009). Our final sample consists of 21,623 households that own their dwelling, and 9,548 which rent it at market conditions, clustered within 28 countries.

Dependent variables. To measure 'access to housing', we look at: 1) affordability; 2) quantity; and 3) quality. Following Rybkowska and Schneider (2011), affordability is operationalised in terms of 'problematic housing costs', consuming more than 40% of disposable household income (2). Housing costs in *SILC* refer to total costs, including costs connected with the household's right to live in the accommodation (3). The costs of utilities (water, electricity, gas, heating) resulting from the actual use of the accommodation are also included. Housing quantity is operationalised in terms of crowding, again following Rybkowska and Schneider (2011). People are considered as living in a crowded dwelling if the household does not dispose of a minimum number of rooms that equals: one room for the household plus one room per couple, one room for each single person aged 18 or more, one room per pair of people between 0 and 17 years. In terms of housing quality, we identify 'housing deprivation' when a dwelling suffers from at least two of the following five conditions: a leaking roof, no bath or toilet, too dark, too noisy and no hot running water. All three dependent variables are dichotomous, and take the value one if the household suffers from restricted access to housing.

Independent variable. Our independent variable is the Gini-coefficient for 2008, taken from Solt (2008-2009; 2009). The Gini-coefficient has a theoretical range from zero (all households have an equal share of income) to 100 (one household receives all income). The Gini-coefficient calculates overall inequality in society, capturing the income distances of 'everybody to everyone'.

Control variables on the country-level. We control for economic affluence by including Gross Domestic Product (GDP) per capita in Purchasing Power Parities (PPP's), measured in 2008 (EUROSTAT 2011). We also include social expenditure (expressed as a % of GDP for 2008, EUROSTAT). We furthermore control for differences that might result from including the former socialist regimes in our sample (i.e. in terms of welfare provision, inequality trends, economic growth, housing regimes), by constructing a dummy for the post-communist countries. Differences in housing markets are captured by including the homeownership rate in 2008 (Andrews and Caldera Sánchez 2011; Dol and Haffner 2010; EMF 2009). We also include a measure that captures the percentage change in house prices between 2003 and 2008 (Bank of International Settlements 2011; EMF 2009) (4). We could not locate a sufficiently reliable indicator measuring the 'cross-sectional' absolute house prices differences between countries. Together, the homeownership rate and our house price change indicator figure as intermediating variables for 'Mechanism 3' – pressures on the housing market. Descriptive statistics for country-level indicators are available at request.

Control variables on the household-level. To control for the level of resources we include equivalised disposable household income (corrected for within-household non-response). To ensure comparability across countries, we standardise income by the country median of the household income (5). We furthermore control for household composition, household size, age of the oldest household member (also squared), the highest educational attainment in the household and whether one or more household members are unemployed or born outside the country of current residence.

Empirical strategy. Before turning to our multi-level models, we take a look at the relationship between income inequality and our other macro-variables. Next, to get a descriptive impression of the multi-level data, we start with a scatter plot of our measure of inequality and the dependent variables. We proceed with multivariate models. Since households are clustered within countries and we are interested in the effect of country-level variables, we estimate random intercept models (6) (Snijders and Bosker 1999).

4. Results

4.1. Income inequality and housing market pressures: the macro-level

We inspect the relationship between income inequality trends and our housing market variables: homeownership rates and the change in house prices over time. Concerning the country-level relationship between the Gini-coefficient and the homeownership rate (both measured in 2008), a simple OLS regression (see Table 1) shows that the impact of inequality on the homeownership rate, controlling for economic affluence, social spending and our 'post-communist' dummy, is positive yet not significant. The only variable reaching statistical significance is the level of social spending, which has a negative effect on the homeownership rate. This relationship is well-known from previous studies.

A more interesting finding concerns the relationship between the percentage change in inequality and the percentage change in house prices for the years 2003-2008. Controlling for GDP growth, homeownership rates in 2008 and our 'post-communist' dummy, house prices have increased significantly more in countries with a higher increase in the Gini-coefficient. This is in line with Hypothesis 3, which states that inequality might restrict access to housing through pressures on the housing market.

Table 1 OLS-results at the macro-level

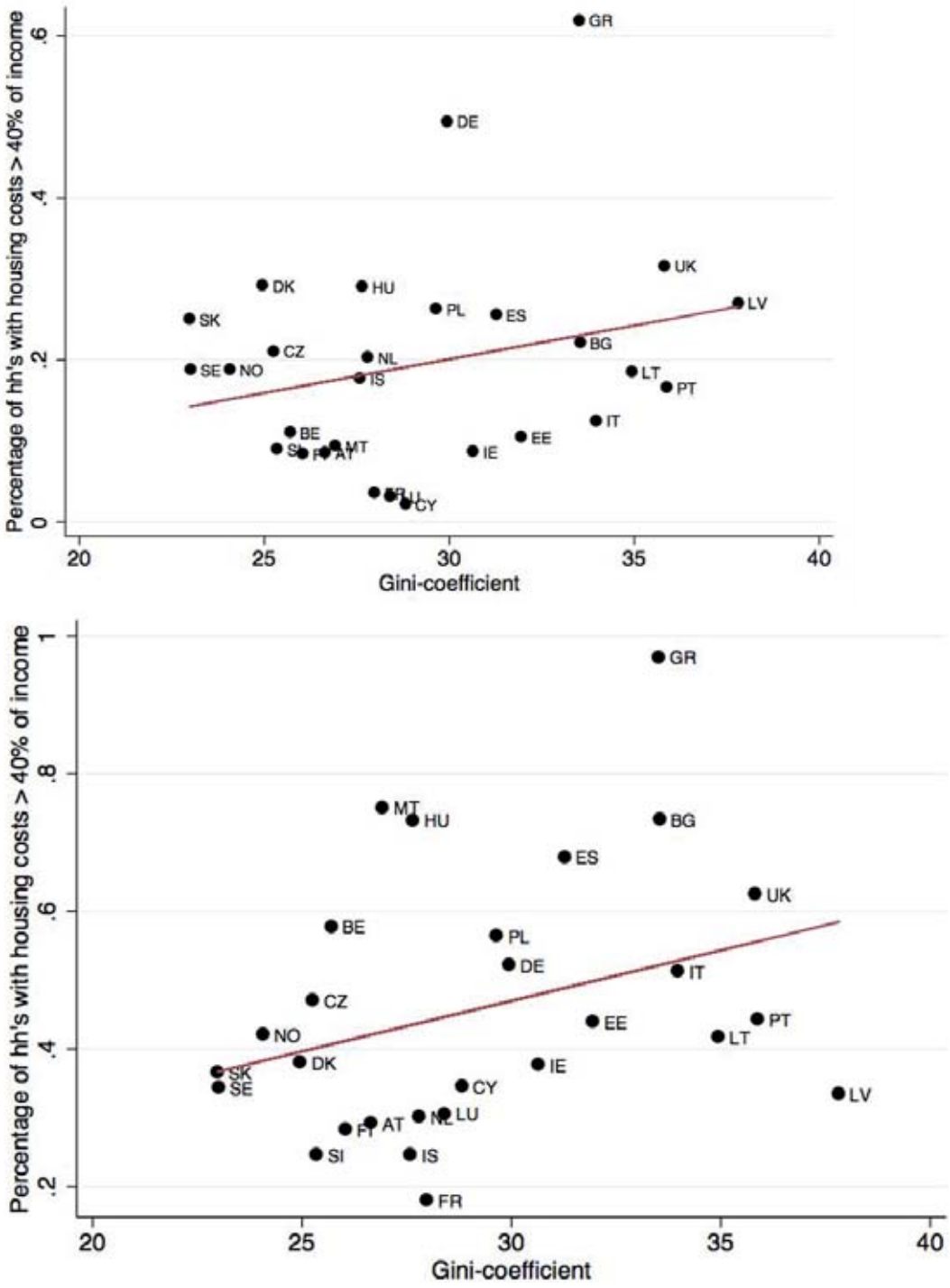
Dependent variable:	B	SE	Beta
Homeownership rate 2008			
Constant	95,564		
Gini-coefficient 2008	0.351	0.517	0.097
GDP 2008	-0.021	0.056	-0.065
Social spending 2008	-1.408*	0.561	-0.493*
Post-communist	9.012	7.067	0.287
R^2 = 0.624			
N = 28			
Dependent variable:	**B**	**SE**	**Beta**
% change in house prices 2003-2008			
Constant	-234.291		
% Change Gini-coefficient 2003-2008	33.795*	12.555	0.386*
GDP growth 2003-2008	11.040	8.560	0.314
Homeownership rate 2008	1.899	0.963	0.418
Post-communist	-6.848	34.520	-0.048
R^2 = 0.570			
N = 27			

* $p < 0.05$ (two-tailed tests).

4.2. Bivariate relationship between income inequality and access to housing

To get an idea of the relation between inequality and our indicators of access to housing, we plotted each of these indicators in Figures 1-3. In Figure 1, we see that inequality and the percentage of households that has housing costs higher than 40% of their incomes correlates moderately positive, both for owners and renters. In Figure 2 and 3 we see a similar picture, albeit more dispersed for crowding and more linear for housing deprivation. These plots suggest that inequality and access to housing are positively correlated.

Figure 1 Inequality by housing costs, owners (a) and renters (b)



4.3. Multilevel results

Earlier, we derived three dependent variables measuring access to housing: problematic housing costs (affordability); crowding (quantity); and housing deprivation (quality). For reasons of space, we only present tables with interesting results on the influence of income inequality.

For low-income owners, the effect of inequality on the likelihood of experiencing *problematic housing costs* is positive but not significant ($p < 0.10$). This does not change when controlling for household income and economic affluence at the country-level (results not presented). The same holds for low-income private renters, though here we find that the initially significant ($p < 0.05$) and positive effect of income inequality on the odds of a too high housing cost burden is mediated by both social expenditure and the homeownership rate (added both separately and in one step, results not presented). It seems therefore that any effect of inequality on housing affordability for low-income owners and renters mainly runs through the 'absolute' level of resources – implying that there is no impact of relative income differences between people as such (in line with Hypothesis 1).

Next, we turn to our indicator of housing quantity – *crowding*. It seems that inequality restricts the 'quantity' of housing for low-income owners. This effect is, however, not immediately evident: from the comparison between Model 2 and Model 3-4 in Table 2, we see that the positive effect of the Gini-coefficient on the odds of experiencing crowding only becomes visible after taking account of the underlying heterogeneity caused by the inclusion of 'old' and 'new' EU Member States. Hence, in countries with a higher income dispersion, low-income homeowners live in smaller houses (relative to their household size and composition). This effect is however not mediated by our housing market indicators, negating Hypothesis 3. Note that our house price indicator measures changes in house prices over time, rather than house prices differences between countries. Hypothesis 2 predicted that higher aspirations following from a larger income dispersion would 'tempt' low-income owners into consuming *more* housing, trying to keep up with those higher up in the income distribution. One could, however, also think of status competition in terms of acquiring the status of homeowner in the first place. Hence, in high-inequality countries, status competition could draw low-income households into homeownership, at the 'cost' of buying a smaller house. In the theoretical section, following Matlack and Vigdor (2008), we suggested that income inequality might increase the cost of housing for everyone, as people in the higher regions of the income distribution can pay more for housing and hence push property prices to a higher level. It could hence also be the case that low-income home-owners in high-inequality countries avoid affordability problems by living in smaller properties. For renters, income inequality is not significantly related to crowding (results not presented). This might reflect the fact that low-income private sector renters usually have less choice concerning the type of dwelling they rent.

Finally, our household-level characteristics reveal that crowding is experienced more by the unemployed, single parents and 'other' households, larger households, households with less educational attainment and households containing members born outside the EU-25. Couples (with and without children) and households with an older 'oldest' household member generally experience less crowding, although the effect for age is curvilinear.

Regarding our final indicator, *housing quality*, we first discuss the main patterns concerning our household-level controls. For both low-income owners and renters (Tables 3 and 4), we find that a lower income, unemployment, less education, and a larger household size significantly increase the likelihood of experiencing housing deprivation. This is also the case for living in a single-person household, compared to all other household types. Households with an older 'oldest' household member experience more deprivation, although the effect is again curvilinear. For renters, households with a member born outside the EU-25 also suffer significantly more often from housing deprivation.

We find a positive and significant effect for the Gini-coefficient: in countries with more income inequality, the odds of experiencing housing deprivation are significantly higher, both controlling for resources at the household- and country-level, as when all control variables are included in the model ($p < 0.01$). The same conclusion applies to low-income private renters: controlling for all intermediating country-level variables, in countries with more income inequality, the likelihood of experiencing housing quality problems is significantly increased ($p < 0.001$). These outcomes are in line with Hypothesis 3, arguing that high income inequality might restrict access to decent housing, mainly through processes causing pressures on house prices and/or on the demand for affordable owner-occupied housing, leading to an inflow of formerly (private) rented properties (as well as part of the better-off renters) into the homeownership segment. In contradiction to Hypothesis 3 however, this process is not mediated by our housing market indicators – the homeownership rate and our house price change indicator.

Possible alternative interpretations of our findings are that status competition in high-inequality countries might fuel the demand for homeownership as such, dragging more low-income households in owner-occupation, at the cost of low quality and quantity of housing. This is in line with our finding that income inequality increases both the likelihood of crowding and housing deprivation for low-income owners, although again, these effects are not mediated by our housing market indicators. However, in this case, the more heterogeneous profile of low-income owners in our sample would have been picked up by our household-level controls. Finally, a housing quality-effect is also found for renters. This brings us to another alternative explanation, which argues that status competition fuelled by income inequality does not lead to an upgrading of housing standards, as suggested by Dwyer (2009), but to a process of 'consumption competition' confronting low-income households. It is conceivable

that in high-inequality countries, the life styles and consumption patterns of the rich drag low-income households into emulative spending (e.g. regarding holidays, electronic gadgets, etc.), resulting in more money being spent on consumer items rather than on housing. This would imply that people give up on housing standards in order to compete for status. Such a process is consistent with authors pointing out how for instance the deregulation of footballer's wages resulted in their detachment from local working class communities. Clubs were transformed into global 'brands' and players into (inter)national celebrities, displaying an extravagant life-style their supporters admire, but cannot even imagine to afford (Crompton 2008).

Table 2 *Random intercept model predicting the likelihood of crowding for owners*

	Model 1		Model 2		Model 3		Model 4	
	B	SE	B	SE	B	SE	B	SE
Gini-coefficient	.106	(.088)	.027	(.080)	.109*	(.045)	.100*	(.042)
GDP			-.021**	(.007)	.004	(.005)		
Social expenditure					.197***	(.059)	.152**	(.051)
Homeownership rate					.023	(.018)		
House price changes					-.001	(.003)		
Post-communist country					4.462***	(.686)	4.318***	(.545)
Household variables								
Equivalised disposable household income			-.210	(.135)	-.214	(.135)	-.214	(.135)
At least one member in household unemployed	.539***	(.051)	.524***	(.052)	.523***	(.052)	.523***	(.052)
Household type (Single person household = ref)	ref.		ref.		ref.		ref.	
Couple without dependent children	-.866***	(.089)	-.854***	(.089)	-.852***	(.089)	-.852***	(.089)
Single parent household	.886***	(.099)	.891***	(.099)	.893***	(.099)	.893***	(.099)
Couple with 1/2 children	-.660***	(.104)	-.645***	(.104)	-.643***	(.104)	-.643***	(.104)
Couple with >3 children	-.023	(.153)	-.010	(.153)	-.008	(.153)	-.008	(.153)
Other household	.301*	(.141)	.317*	(.142)	.321*	(.142)	.321*	(.142)
Household size	.356***	(.029)	.355***	(.029)	.355***	(.029)	.355***	(.029)
Age	-.133***	(.019)	-.133***	(.019)	-.134***	(.019)	-.134***	(.019)
Age squared	.001***	(.000)	.001***	(.000)	.001***	(.000)	.001***	(.000)
Country of birth (Same country as residence = ref)	ref.		ref.		ref.		ref.	
EU-25	.248	(.157)	.259	(.157)	.255	(.157)	.262	(.156)
Other country	.417***	(.085)	.419***	(.085)	.417***	(.085)	.418***	(.085)
Education (Lower secondary education and below = ref)	ref.		ref.		ref.		ref.	
Upper secondary education	-.266***	(.060)	-.257***	(.060)	-.260***	(.060)	-.261***	(.060)
Postsecondary and tertiary	-.548***	(.074)	-.537***	(.074)	-.538***	(.074)	-.539***	(.074)
Constant	-3.159	(2.620)	1.508	(2.727)	-11.137***	(3.159)	-7.647***	(2.082)
Log-likelihood	-6965.4		-6960.5		-6943.9		-6945.0	
Sigma u	1.881		1.611		.803		.840	
Intra-class correlation	.518		.441		.164		.176	

Source: EU-SILC 2009. * p<0.05, ** p<0.01, *** p<0.001 (two-tailed tests).

Table 3 *Random intercept model predicting the likelihood of housing deprivation for owners*

	Model 1		Model 2		Model 3		Model 4	
	B	SE	B	SE	B	SE	B	SE
Gini-coefficient	.125***	(.035)	.082*	(.033)	.086***	(.021)	.063**	(.024)
GDP			-.008**	(.003)	-.000	(.002)	-.004	(.002)
Social expenditure					-.034	(.026)	-.064**	(.021)
Homeownership rate					-.012	(.009)		
House price changes					.003*	(.001)	.004*	(.002)
Post-communist country					.965**	(.304)		
Household variables								
Equivalised disposable household income			-1.225***	(.123)	-1.229***	(.123)	-1.223***	(.123)
At least one member in household unemployed	.366***	(.049)	.292***	(.050)	.292***	(.050)	.292***	(.050)
Household type (Single person household = ref)	ref.		ref.		ref.		ref.	
Couple without dependent children	-.299***	(.072)	-.238**	(.073)	-.231**	(.073)	-.236**	(.073)
Single parent household	-.312**	(.099)	-.282**	(.099)	-.278**	(.099)	-.281**	(.099)
Couple with 1/2 children	-.574***	(.096)	-.484***	(.096)	-.478***	(.096)	-.483***	(.096)
Couple with >3 children	-.632***	(.148)	-.563***	(.149)	-.553***	(.149)	-.559***	(.149)
Other household	-.428**	(.139)	-.337*	(.140)	-.333*	(.140)	-.337*	(.140)
Household size	.065*	(.027)	.062*	(.027)	.061*	(.027)	.061*	(.027)
Age	.050**	(.019)	.047*	(.019)	.047*	(.019)	.047*	(.019)
Age squared	-.001**	(.000)	-.000*	(.000)	-.000*	(.000)	-.000*	(.000)
Country of birth (Same country as residence = ref)	ref.		ref.		ref.		ref.	
EU-25	.087	(.130)	.096	(.130)	.099	(.130)	.095	(.130)
Other country	-.068	(.084)	-.066	(.084)	-.060	(.084)	-.062	(.084)
Education (Lower secondary education and below = ref)	ref.		ref.		ref.		ref.	
Upper secondary education	-.552***	(.052)	-.517***	(.052)	-.522***	(.052)	-.513***	(.052)
Postsecondary and tertiary	-.868***	(.067)	-.827***	(.067)	-.832***	(.067)	-.825***	(.067)
Constant	-6.262***	(1.120)	-3.502**	(1.186)	-3.339*	(1.453)	-2.195*	(1.066)
Log-likelihood	-7885.4		-7833.7		-7820.2		-7824.7	
Sigma u	.741		.651		.381		.456	
Intra-class correlation	.143		.114		.042		.060	

*Source: EU-SILC 2009. * p<0.05, ** p<0.01, *** p<0.001 (two-tailed tests).*

Table 4 *Random intercept model predicting the likelihood of housing deprivation for renters*

	Model 1		Model 2		Model 3		Model 4	
	B	SE	B	SE	B	SE	B	SE
Gini-coefficient	.107***	(.027)	.085**	(.027)	.108***	(.023)	.094***	(.021)
GDP			-.005*	(.002)	.001	(.002)		
Social expenditure					.014	(.030)		
Homeownership rate					-.008	(.009)		
House price changes					.003	(.002)		
Post-communist country					1.024**	(.350)	.839***	(.190)
Household variables								
Equivalised disposable household income			-.770***	(.169)	-.766***	(.169)	-.771***	(.169)
At least one member in household unemployed	.287***	(.064)	.233***	(.065)	.233***	(.065)	.231***	(.065)
Household type (Single person household = ref))	ref.		ref.		ref.		ref.	
Couple without dependent children	-.229*	(.100)	-.174	(.100)	-.166	(.100)	-.168	(.100)
Single parent household	-.181	(.114)	-.154	(.114)	-.148	(.114)	-.148	(.114)
Couple with 1/2 children	-.603***	(.142)	-.526***	(.143)	-.516***	(.143)	-.517***	(.143)
Couple with >3 children	-.757**	(.237)	-.690**	(.237)	-.673**	(.237)	-.675**	(.237)
Other household	-.451	(.233)	-.375	(.233)	-.357	(.233)	-.360	(.233)
Household size	.093*	(.046)	.081	(.046)	.076	(.046)	.075	(.046)
Age	.064***	(.018)	.074***	(.018)	.075***	(.018)	.075***	(.018)
Age squared	-.001***	(.000)	-.001***	(.000)	-.001***	(.000)	-.001***	(.000)
Country of birth (Same country as residence = ref)	ref.		ref.		ref.		ref.	
EU-25	.197	(.115)	.213	(.116)	.206	(.116)	.205	(.114)
Other country	.228**	(.076)	.214**	(.076)	.226**	(.076)	.223**	(.076)
Education (Lower secondary education and below = ref)	ref.		ref.		ref.		ref.	
Upper secondary education	-.129	(.067)	-.118	(.067)	-.133*	(.067)	-.129	(.067)
Postsecondary and tertiary	-.210*	(.083)	-.197*	(.083)	-.210*	(.083)	-.202*	(.083)
Constant	-5.845***	(.857)	-4.510***	(.951)	-5.993***	(1.605)	-5.516***	(.694)
Log-likelihood	-4260.1		-4247.8		-4240.2		-4241.9	
Sigma u	.513		.486		.343		.368	
Intra-class correlation	.074		.067		.034		.040	

*Source: EU-SILC 2009. * p<0.05, ** p<0.01, *** p<0.001 (two-tailed tests).*

5. Conclusion and Discussion

In this paper we analysed how relative income differences are related to 'access to housing' in 28 European countries. Our three indicators of access to housing refer to affordability (problematic housing cost burden), quantity (crowding) and quality (housing deprivation). We developed three arguments explaining how income inequality might affect access to housing: 1) the absolute level of resources; 2) rising aspirations; and 3) pressures on the housing market. Given that more vulnerable households will 'suffer' first from a high level of income inequality, our analyses are restricted to low-income homeowners and private sector renters.

According to our first hypothesis, the effect of income inequality in countries of a similar level of economic affluence runs through the absolute level of resources, while in countries at different stages of economic development, differences in affluence determine access to housing. This hypothesis was confirmed in our analyses of housing affordability: relative income differences do not affect the experience of high housing costs. A cautionary note is in place, as this indicator has an ambiguous interpretation: compared to lower-income households, higher-income households can more easily afford to pay 40% or more of their household income on housing, as their residual absolute income 'after housing costs' might still be higher – these households would also be included in our analyses as 'problematic'. Therefore, we also studied housing quality and quantity.

According to the literature, homeownership is an (ir)rationally planned investment, possibly resulting in speculation and overconsumption, implying that homeownership is a status good. We hypothesised that social pressure and status competition might lead to higher housing standards. Such an outcome could result from people trying to keep up with those situated in the richer part of a wider income distribution. Furthermore, as the rich improve their housing standards, a filtering process might occur through which their former homes are occupied by the household 'below' them. However, our findings show that this hypothesis is not supported. Rather than improving the standard of housing, we find that income inequality is positively related to the likelihood of experiencing crowding for low-income owners. There is, however, an explanation that is consistent with a process of status competition: if homeownership as such is a status good, then low-income households renting their dwelling might strive to become homeowner, at the cost of living in a smaller home.

From studies on house price developments and processes on the housing market, we derived the hypothesis that income inequality increases housing market pressures. That is, by making housing more expensive for both rich and poor or by an 'extension' of the homeownership segment into other segments of the housing market, access to housing is restricted. This outcome as such is confirmed: in countries with a higher level of income

inequality, both low-income owners and private sector renters experience significantly more housing deprivation. However, the Gini-coefficient remains significant when controlling for a number of housing market variables, herewith rejecting Hypothesis 3.

It thus seems that further analyses should look into a range of alternative explanations for our findings. One possible explanation is that our housing market indicators are crude, and are hence not able to pick up important differences between countries. Note that at the macro-level, we were able to establish a relationship between income inequality trends and house prices changes. Although efforts have been made to improve European housing statistics (e.g. Dol and Haffner 2010), there is still a long way to go. Good-quality information is available for a few countries only; for many countries the gaps on more sophisticated indicators largely remain unfilled. A possible way forward would be to look at the impact of aggregate indicators at a lower level, as national housing indicators mask important regional differences. Another 'data-driven' explanation relates to the way housing-related variables are measured. The aim of *EU-SILC* is to provide information on living conditions, and this is reflected in the questionnaire. Rather than rents and mortgage costs (7), one has decided to include an indicator of total housing costs. Furthermore, compared to the *European Community Household Panel* (*ECHP*), the distinction between different tenures has become blurred. This might also contribute to our lack of support for Hypotheses 3 – at least when it comes to the causal mechanisms involved.

There may also be a more substantial explanation: housing standards could be sacrificed for other consumption expenditure. This might especially be the case for the low-income households that we analysed. In a process of status competition where high levels of income inequality lead to a display of extravagant living standards by the rich, the households in the lower regions of the income distribution struggle to keep up and might chose to spend on clothing, cars or holidays, instead of on housing.

An important conclusion from this paper is that – for low-income European households – relative income differences have an 'independent' influence on the housing quality. Given the upward trend in income inequality and the financial difficulties most countries are facing, this is an important and policy-relevant finding. Bad housing conditions are associated with a host of negative outcomes, particularly for young children (e.g. increased morbidity and mortality, lower educational attainment) (e.g. Bradley and Corwyn 2002). Our results also point at the importance of analysing so-called 'indicators of deprivation', as they complement more conventional income-based poverty measures (Nolan and Whelan 2010). Finally, although we were not able to tease out a potential causal link through national indicators of housing market pressures, this paper contributes to the literature by testing hypotheses derived from theoretical ideas and empirical studies. In the past, research on housing has been described as

'descriptive', 'non-analytic' or 'too complex' to put to rigorous empirical testing. With this paper, we respond to Oxley's (2001) claim that housing is a field of study rather than a separate discipline, and should hence be analysed using 'mainstream' sociological theory and methods.

Notes

1 We use the modified OECD-equivalence scale. This equivalence scale attributes a weight of 1 to the first adult in the household, each additional adult is given a weight of 0.5 and each child younger than 14 years of age is attributed a weight of 0.3.

2 (Unequivalised housing cost - housing allowances) / (unequivalised household income - housing allowances).

3 For *owners*, this means that housing costs include mortgage interest payments (net of any tax relief), structural insurance, mandatory services and charges (sewage removal, refuse removal, etc.), regular maintenance and repairs, and taxes. For *renters*, housing costs include rent payments, gross of housing benefits (i.e. housing benefits included), structural insurance (if paid by the tenants), services and charges (sewage removal, refuse removal, etc.) (if paid by the tenants), taxes on dwelling (if applicable), regular maintenance and repairs.

4 The correlation between the percentage change in house prices from both sources is 0.946*** (both sources rely on national banks and statistical institutes). We use the average percentage change from both sources.

5 Including household income expressed in PPP's as an alternative indicator for the household's level of resources has a similar effect (results available).

6 As a first step, an empty model is estimated to check whether there is significant variation at the country-level, which is indeed the case ($p < 0.001$). To calculate the ICC we use the latent variable approximation, as suggested by Snijders and Bosker (1999) ($ICC = \frac{\sigma_u^2}{\sigma_u^2 + \pi^2/3}$). The intra-class correlation for housing deprivation is .20 (owners) and 0.13 (renters). For crowding, the ICC's are 0.49 (owners) and 0.30 (renters). To ensure that the contextual variation is not due to household characteristics, we estimate a composition model including all household characteristics. The ICC's are 0.18 (owners) and 0.12 (renters) for housing deprivation and 0.53 (owners) and 0.39 (renters) for crowding. This indicates that there is sufficient variation to be explained by country-level characteristics.

7 *EU-SILC* provides information on rental costs for renters, but not on mortgage costs for owners.

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Information on the GINI project

Aims

The core objective of GINI is to deliver important new answers to questions of great interest to European societies: What are the social, cultural and political impacts that increasing inequalities in income, wealth and education may have? For the answers, GINI combines an interdisciplinary analysis that draws on economics, sociology, political science and health studies, with improved methodologies, uniform measurement, wide country coverage, a clear policy dimension and broad dissemination.

Methodologically, GINI aims to:

- exploit differences between and within 29 countries in inequality levels and trends for understanding the impacts and teasing out implications for policy and institutions,
- elaborate on the effects of both individual distributional positions and aggregate inequalities, and
- allow for feedback from impacts to inequality in a two-way causality approach.

The project operates in a framework of policy-oriented debate and international comparisons across all EU countries (except Cyprus and Malta), the USA, Japan, Canada and Australia.

Inequality Impacts and Analysis

Social impacts of inequality include educational access and achievement, individual employment opportunities and labour market behaviour, household joblessness, living standards and deprivation, family and household formation/breakdown, housing and intergenerational social mobility, individual health and life expectancy, and social cohesion versus polarisation. Underlying long-term trends, the economic cycle and the current financial and economic crisis will be incorporated. Politico-cultural impacts investigated are: Do increasing income/educational inequalities widen cultural and political 'distances', alienating people from politics, globalisation and European integration? Do they affect individuals' participation and general social trust? Is acceptance of inequality and policies of redistribution affected by inequality itself? What effects do political systems (coalitions/winner-takes-all) have? Finally, it focuses on costs and benefi ts of policies limiting income inequality and its effi ciency for mitigating other inequalities (health, housing, education and opportunity), and addresses the question what contributions policy making itself may have made to the growth of inequalities.

Support and Activities

The project receives EU research support to the amount of Euro 2.7 million. The work will result in four main reports and a final report, some 70 discussion papers and 29 country reports. The start of the project is 1 February 2010 for a three-year period. Detailed information can be found on the website.

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GINI GROWING INEQUALITIES' IMPACTS

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