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Public Policies and the Housing Affordability Gap

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Public Policies and the Housing Affordability Gap*

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DIW Berlin

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Abstract

Between 1950 and 2023, the housing cost burden — approximated by the proportion of total household consumption expenditure spent on housing, water, electricity and fuel — has risen almost steadily in many countries around the world. First, this trend can be explained by substantial improvements in the quantity and quality of housing. In fact, in some countries (e.g., Germany), per capita floor space has more than doubled since 1950. In developed countries, the availability of toilets, hot water and electricity rose from less than 50% of dwellings to almost 100% over the same period. Second, the increase in the housing cost burden is due to the higher rate of increase in housing costs compared to total consumer expenditures. Low-income households are particularly affected by this trend. Compared to high-income households, they spend a larger share of their consumption on housing. Such a deterioration in housing affordability can negatively affect health and education by reducing the residual income that could have been spent on them. This, in turn, can lead to lower incomes for these households, preventing them from closing the income gap with higher-income households. Third, the growing housing cost burden may be the result of the retreat of the state from social policy, including the removal of the strong rent control that was installed in many countries (including all European states) during World War II and effectively froze housing rents. This study examines the impact of housing policies on housing inequality, focusing on affordability gaps across income groups. Using longitudinal data from 28 countries between 1981 and 2023, I analyze the impact of housing policies such as rent control, housing subsidies and social housing on housing cost burdens. My results show that tenant protection policies reduce the proportion of housing costs for both low- and high-income households, without affecting the gap between them.

Keywords: Housing affordability, housing inequality, rent control, housing allowances, social housing

JEL codes: C23, O18, R38

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1 Introduction

Housing costs are the largest item of consumer spending. That is why increases in these costs are very noticeable at both the individual and societal levels. If housing costs rise faster than income, this can have a number of negative consequences (see the figure below). At the individual level, this can have three effects. On the one hand, less money can be spent on other important things such as food, healthcare, and education. This can lead to poor health and inability to work, perpetuating the affordability problem Meltzer and Schwartz (2016). On the other hand, excessive housing costs can force people to move to smaller and possibly poorer quality housing that is not adequate for the size of their family, leading to overcrowding. Poor housing conditions (damp, dark and overcrowded dwellings), in turn, lead to health problems (Palacios et al. 2021; Howden-Chapman et al. 2023) and, in the case of children, poor school performance (Goux and Maurin 2005), which in turn reduces the chances of overcoming housing problems and escaping poverty (Lopoo and London 2016). Thirdly, people may have to leave their neighborhood and move to the outskirts of the city, where rents are lower. This can lead to a loss of social capital and increased financial, time, and environmental costs for travel (Blumenberg and King 2021; Blumenberg and Siddiq 2023). All of this is directly linked to a range of health problems and can have a negative impact on children's school performance, thereby worsening their future prospects. This creates a vicious circle in which it becomes increasingly difficult to escape poverty.

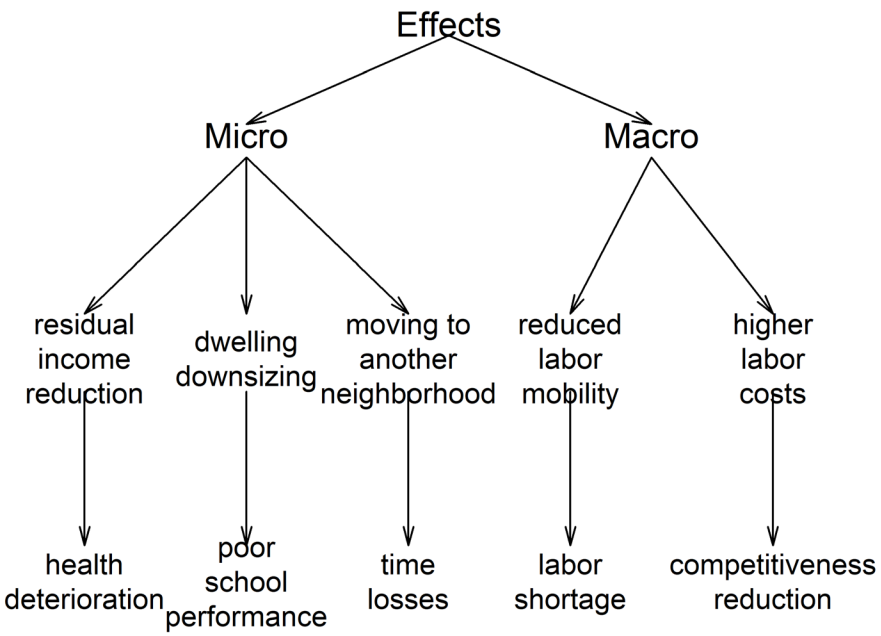

Figure 1: Effects of high housing cost burden

There are also two macroeconomic channels through which rising housing costs could affect society as a whole. Since housing costs account for a large proportion of consumer spending,

their increase means a noticeable loss of purchasing power. This leads to employees demanding wage increases and possibly receiving them. In macroeconomic terms, this leads to higher unit labor costs and a decline in competitiveness on international markets. Regions with high housing costs also tend to be less attractive to immigrant workers (Michaelides 2011; Zhang et al. 2019). This exacerbates the shortage of skilled workers and reduces growth potential.

Housing affordability and housing conditions are determined by a variety of factors, including socio-economic, demographic, geographical and technical conditions. Governmental decisions can also play a role. On the one hand, the government can explicitly seek to improve housing conditions by supporting households and shaping housing quality standards. On the other hand, the unintended effects of some government policies can affect housing affordability negatively.

In this study, I investigate the potential impact of three housing policies (rent control, social housing and housing allowances) on housing affordability using data on 28 countries between 1981 and 2023. Using panel data models with fixed effects, I found that these policies affect housing affordability, but do not reduce the affordability gap between low- and high-income households.

The study is structured as follows. In the next section, I present a review of literature on the forms and determinants of different inequality, including various types of housing inequality. Section 3 defines the notion of housing affordability used in this study and presents its long-term evolution for an international sample of countries. Section 4 sets up the econometric model, describes the explanatory variables and reports the estimation results. Section 5 concludes the study. The appendix reports the descriptive statistics of the variables used in this study and contains a summary table providing an overview of the literature on inequality and its determinants.

2 Literature review

2.1 Measures of inequality

Inequality can manifest in many ways. In this study, I conducted a review of the empirical literature on the determinants of various types of economic inequality. My aim was to identify the typical measures of inequality used in the literature, as well as the types of determinants found to influence inequality.

First, I will analyze the measures of inequality. The figure below illustrates how frequently different measures of inequality are used in the empirical literature.[1] The length of each bar

[1] These studies were identified through a literature search on Google Scholar.

shows the number of studies devoted to a particular measure. Some studies consider multiple measures (including Atkinson, entropy, and Gini indices).[2]

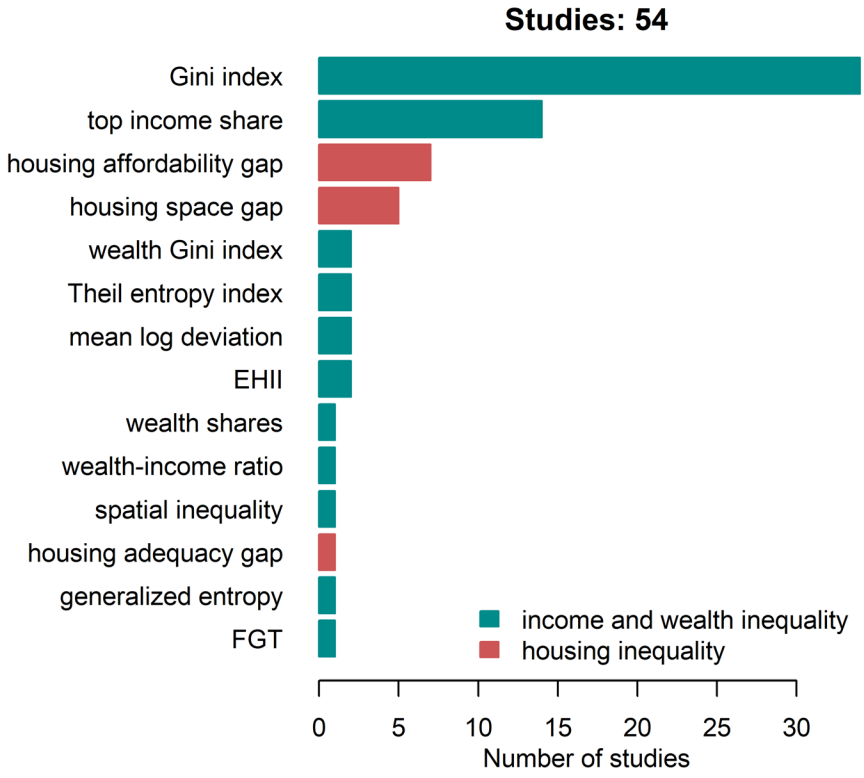

Figure 2: The measures of inequality

Source: Own construction. Note: EHII stands for estimated household income inequality; and FGT denotes Forster, Greer, Thorbecke measure of inequality.

Most of the empirical studies reviewed concentrate on income or wealth inequality. Relatively few concentrate on housing inequality. Three types of housing inequality are identified in the literature: the affordability gap, the space gap and the adequacy gap. The housing affordability gap is defined as the difference in the housing cost-to-income ratio between low- and high-income households. The housing space gap is the difference in dwelling size and inhabitant density between these two groups, while the housing adequacy gap is the difference in housing quality.

Most of the studies on housing inequality focus on a single country and use microdata. Only two studies use international data. Dewilde and De Decker (2016) examine two measures of housing inequality: the affordability gap and the housing conditions (or adequacy) gap. They define both gaps as the difference between low- and middle-income households. Their sample is rather small,

[2] For more information on alternative measures of inequality, see Costa and Pérez-Duarte (2019) and the HouseInc project deliverable D3.1 — Report on Selection of Datasets and Indicators for Selected Countries).

covering 11–13 Western European countries and two years (1995 and 2012). Aizawa, Helble, and Lee (2020) focus on the housing adequacy gap, which they measure using a wide range of indicators, including the condition of plumbing, heating, toilets, kitchens, electricity and wiring, and maintenance. They compare eleven countries (the USA and ten Asian countries) over an even shorter time span, from 2012 to 2017.

2.2 Determinants of housing inequality

Based on my literature review presented in the previous subsection, I analyzed the econometric model specifications in order to determine the types of explanatory variables used in the literature. Empirical studies of the determinants of housing inequality employ a variety of explanatory variables.[3] Analyzing these could help us to specify my own regression model and examine the potential impact of government regulations on housing inequality. The determinants identified in the literature can be used as control variables in my study.

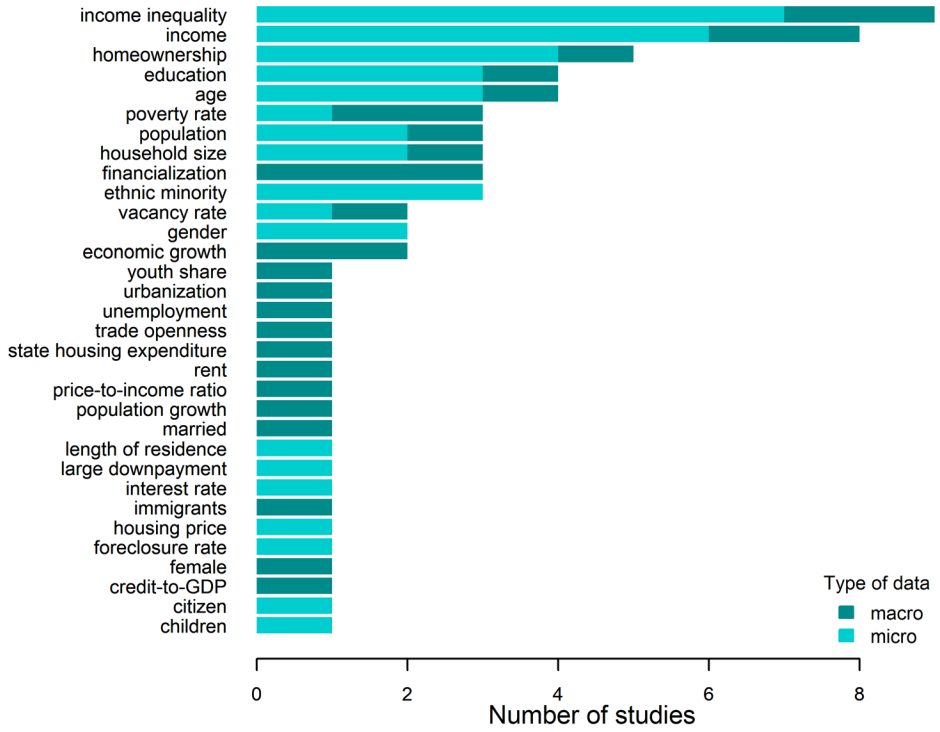

Figure 3: The determinants of inequality and affordability

Note: The length of each bar shows the number of studies using a particular explanatory variable.

Overall, 32 determinants have been identified. Many of them are used in only one study. The most commonly used control variables are income inequality, income, homeownership, education, age, poverty rate, population, household size, financialization, and ethnic minority.

[3] For a full list of studies on economic and housing inequality, see Table A2 in the Appendix.

The majority of studies are based on microdata from surveys and focus on a single country. The unit of observation is usually a household. In studies using macrodata, the unit of observation is the whole country or its regions (e.g., counties or metropolitan areas).

2.3 The impact of governmental policies

A large meta-study by Kholodilin (2025b) summarizes the impact of government policies on the housing market. Among other things, some of these policies affect inequality, as shown in the figure below. Most of these studies look at the impact on income inequality and very few focus on housing inequality.

The figure below illustrates how housing policies affect inequality. Each row corresponds to an effect and each column to a policy. The number of studies examining the effect of each policy is shown above that policy's column. The length of each bar reflects the relative attention paid by researchers to the corresponding policy-effect pair, as measured by the number of studies examining it. As some policies are examined in many studies and others in few, I normalize the number of studies devoted to a particular effect of a particular policy. For each policy instrument, this number is divided by the total number of studies examining that instrument. The color of the bars indicates the direction of the effect. Green indicates studies that found a statistically significant positive effect, while red indicates studies that found a statistically significant negative effect. A yellow bar indicates studies that found no statistically significant effect of the policy.

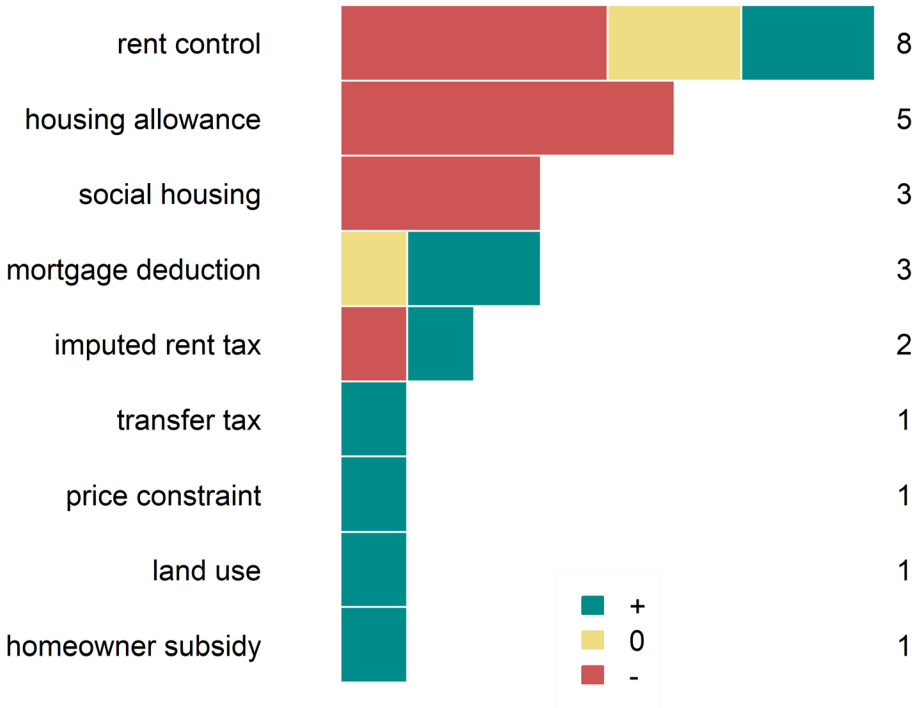

Figure 4: The impact of housing policies on inequality

Source: Kholodilin (2025b)

Overall, 9 housing policies are found to affect economic inequality. No studies investigating the effects of these policies on housing inequality were found. Only for mortgage deduction, social housing, housing allowance, rent control there are at least three studies. Among these policy instruments, three policies seem to reduce inequality: rent control, housing benefits, and social housing. In contrast, the mortgage interest deduction seems to increase inequality.

3 Long-term trends of housing affordability

There are various measures of housing inequality (Haffner and Hulse 2021; Stone 2006). As mentioned above, in the overview of the inequality measures, the three most widely used measures are housing affordability, housing space, and housing adequacy gaps. The first measure focuses on the financial burden of housing, the second on differences in housing consumption (e.g., floor area or number of rooms per person) and the third on differences in housing quality (e.g., availability of amenities) for different income groups. Housing affordability can be approximated by different indicators. Two approaches are the most popular in the literature: 1) the ratio approach, 2) the residual income approach, and 3) housing consumption (Galster and Lee 2021). Under the ratio approach, housing is considered affordable if the ratio of housing expenditure to income or to the sum of all expenditures does not exceed a certain amount (Galster and Lee 2021, 10). Under the residual income approach, housing is considered affordable if the income remaining after deducting housing expenditure is sufficient to consume a minimum acceptable amount of non-housing goods (Galster and Lee 2021, 9). For instance, Kutty (2005) examines the evolution and determinants of a non-housing poverty that is defined as "the situation that arises when a household, after paying for housing, cannot afford the poverty basket of non-housing goods." According to the housing consumption approach, housing is considered affordable if a household spends more than the minimum acceptable amount on housing (Galster and Lee 2021, 10). The latter can be expressed in terms of square meters, rooms, or bedrooms per capita.

Most national statistical offices reporting consumer expenditure by categories and by income distribution, use quintiles, many also use deciles which can be recalculated into quintiles. Much fewer statistical offices use quartiles (e.g., Statistik Austria and SSB Norway). Very few national statistical offices employ such exotic measures as octiles (NSO Malta). I have therefore decided to stick with quintiles. Unfortunately, the use of quartiles and octiles precludes the recalculation of consumer expenditure into quintiles. Hence, I do not have comparable data on the housing affordability gap for the corresponding countries (Malta and Norway).

In addition, the quintiles can be identified based on different measures. The most widespread measure is the income and it can be different. In some cases, it is simply disposable income, in other cases, statistical offices apply the measure of equalized income. Often, also quantiles based on consumer expenditure are used. Moreover, the expenditure can be expressed either in current or in constant prices.

The definition of housing-related expenditure is largely consistent. The majority of statistical offices report data on housing, water, electricity, gas and other fuels, which corresponds to

division 4 of the Classification of Individual Consumption by Purpose (COICOP) used internationally as part of the System of National Accounts (United Nations 2018).

The data sources also differ. National statistical offices report data on consumer costs using either national accounts data or household budget survey results. The resulting consumer shares may differ both in terms of levels and changes.

All these data-related caveats make it difficult to produce harmonized international data. However, I try to use data that are as homogeneous as possible.

Here, the housing cost burden is defined as the average percentage of housing costs in total consumer spending. The figure below displays the long-term trends in housing cost shares in selected countries for which data spanning more than 50 years are available.

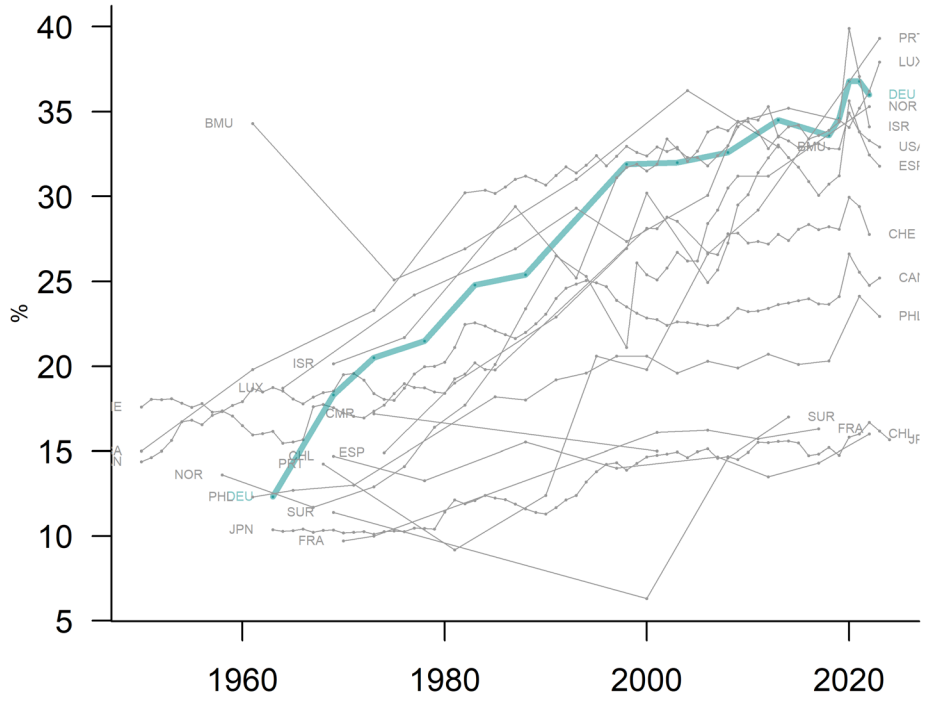

Figure 5: Long-term evolution of housing cost shares

Sources: National statistical offices and own representation

After the Second World War (WWII), the share of housing costs in total household consumption expenditure rose from around 15% to more than 30% in the early 2020s. This increase reflects four main trends. Firstly, there has been a significant improvement in the quality of housing (Eichholtz et al. 2025). In particular, per-capita floor space has increased dramatically since 1950 (Ellsworth-Krebs 2020; Kholodilin 2025a). In the industrialized countries, the proportion of dwellings with a toilet, electricity, and hot water rose from less than 50% immediately after the Second World War to almost 100%. Secondly, housing cost inflation in excess of income growth has contributed to a deterioration in housing affordability. Thirdly, an increase in real income

levels could lead to shifts in the cost shares of different categories of goods and services. The relationship between income and demand for housing is not entirely clear. Up to a certain income level, the housing cost share can increase; after this point, it behaves like an inferior good and declines as income continues to increase. Fourthly, rent controls introduced in many countries during WWII kept housing rents in check during the first decades after the war, while most other consumer prices were set freely. As the housing shortage caused by WWII gradually diminished, rent controls were lifted and housing rents started to catch up other prices.

The figure below compares the housing cost shares of the households in the first and fifth income quintiles. Each country is represented by its three-letter ISO alpha-3 code, which is an internationally recognized system for identifying countries. The 45 degrees dashed line represents cases where the households in both quintiles spend the same share of the consumer expenditure on housing. The points to the right of this line correspond to the cases where households in the top quintile spend relatively less on housing than their counterparts in the bottom quintile.

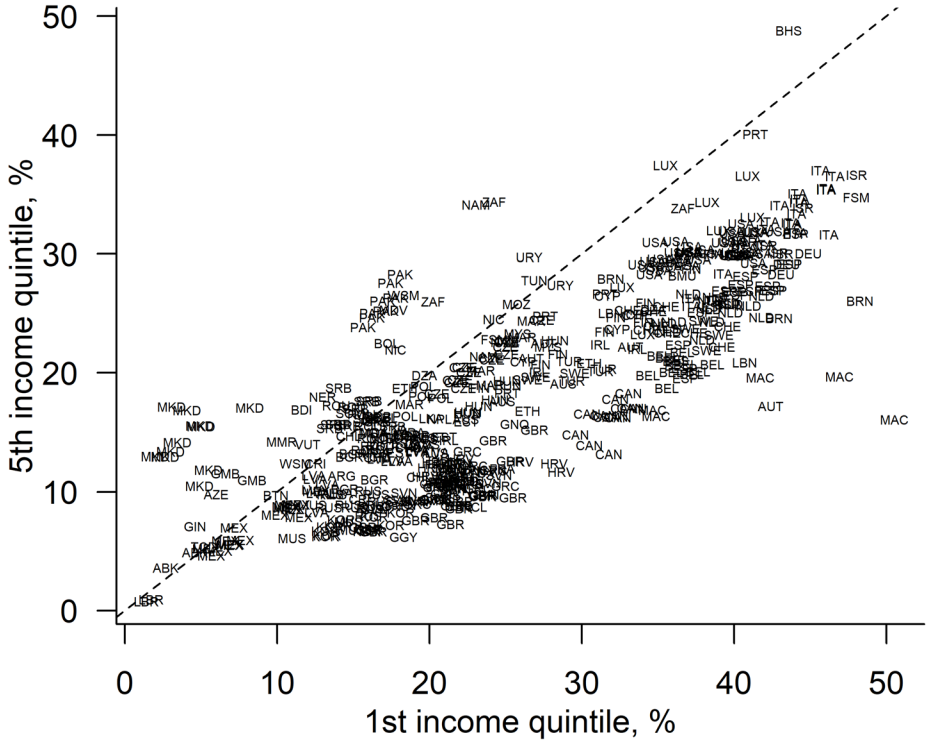

Figure 6: Housing cost gap between low- and high-income households

Sources: National statistical offices and own representation

In most countries, the households in the top quintile spend relatively less on housing than the bottom 20% of households. The exceptions are two countries located mostly outside of Europe and North America.

The next figure shows the housing cost shares at all quintiles of income. For the sake of comparability, all data points for each pair of country and year were standardized using minmax transformation so that they vary between 0 and 1.

$$\tilde{Q}_{it}^{j} = \frac{Q_{it}^{j} - Q_{it}^{min}}{Q_{it}^{max} - Q_{it}^{min}}$$

where Q_{it}^{j} is the j-th quintile for country i in year t; Q_{it}^{min} is the minimum of all five quintiles; and Q_{it}^{max} is the maximum. Each thin grey line goes through the standardized housing cost ratios at all quintiles for country i in year t. The thick black line represents the mean of all individual curves.

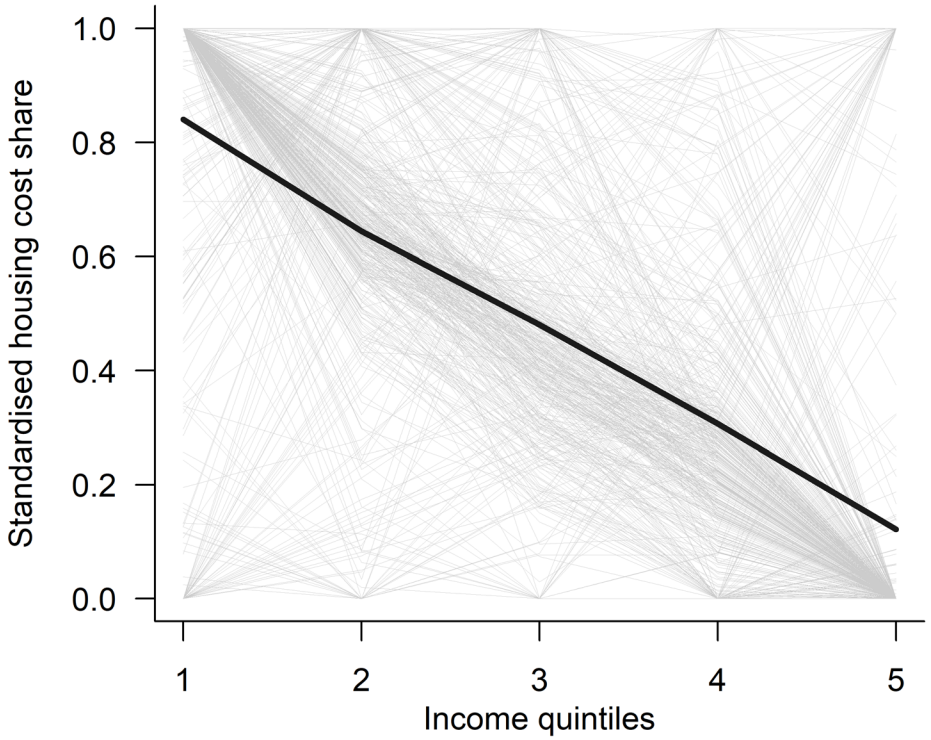

Figure 7: Housing cost share by income or expenditure quintiles

In most countries, the housing cost share monotonically declines, with that for low-income households exceeding the housing cost share for higher-income households. Sometimes, the housing cost share of households in the 1st quintile of disposable income is twice as high. The mean of all the curves has a negative slope, indicating that, typically, the higher the income, the smaller the share of housing costs. However, for some countries, almost exclusively low-income ones, higher-income households spend relatively more on housing than the lower-income households. In many cases, the middle-income households have the highest housing cost share.

The question is whether the gap between the lowest and the highest quintile remains constant or shows a certain trend. To answer this question, I calculate the ratio of housing cost shares between the first and the fifth quintile of disposable income.

$$Gap_{it} = \frac{Q_{it}^1}{Q_{it}^5}$$

where Q_{it}^1 is the housing cost share at the first quintile and Q_{it}^5 is the housing cost share at the fifth quintile.

To make the country-specific ratios more comparable, I standardize them as follows:

$$\widetilde{Gap_{it}} = \frac{Gap_{it} - \mu_i}{\sigma_i}$$

where μ_i is the country-specific mean of the ratio of housing cost shares, Gap_{it} and σ_i is the country-specific standard deviation of the ratio.

The figure below shows boxplots of standardized ratios of housing cost shares by decade. From the original ratios the means were subtracted and resulting deviations were divided by standard deviation in order to render them comparable across countries. To ensure that changes in distribution are solely attributable to shifts in housing cost shares rather than changes in sample composition, I present boxplots for countries with data on housing cost distribution spanning at least four out of five decades.

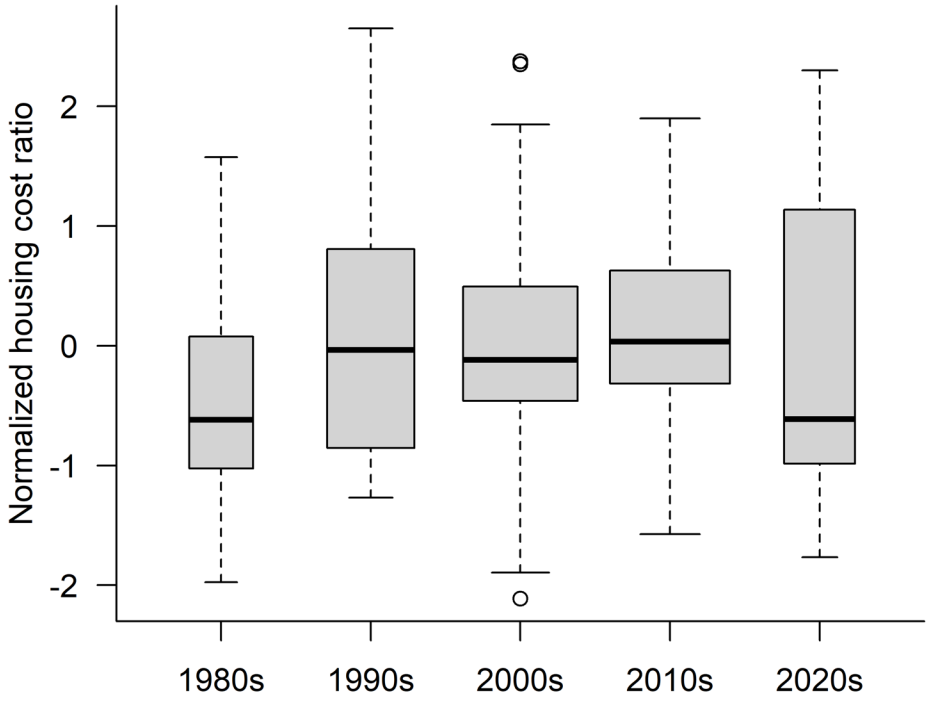

Figure 8: Evolution of housing affordability gap

Source: Own calculations

This graph is based on data from 13 countries (Australia, Canada, Chile, Finland, Italy, Japan, Luxembourg, Mexico, Morocco, Portugal, Slovenia, Switzerland, and USA). As it shows, the relative gap in housing costs between the lowest and highest quintiles increased between the 1980s and the 2010s. However, after the 2010s the gap somewhat declined. In part, this could be a composition effect: for the 2020s I have fewer observations than for the 2010s, as the widths of the boxes show.

4 Econometric analysis

This section presents the empirical approach of this study. First, the data used in the analysis are described. Secondly, the estimation methodology and results are presented.

4.1 Data

Dependent variables: The dependent variables used here are the proportion of total household expenditure accounted for by housing costs, for all households and for all quintiles of disposable income or expenditure, as well as the ratio between the first and fifth quintiles (see Table A1).

Given that the data on housing cost shares are often available at irregular intervals, they were interpolated. Interpolation was done using the function *stinterp* included in the *stinepack* library of the **R** programming language using the Stineman algorithm (Stineman 1980).

Given the availability of data, the sample covers 28 countries (Australia, Austria, Canada, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Republic of Korea, Slovakia, Slovenia, Spain, Sweden, Switzerland, and USA) between 1981 and 2023.

Control variables: Based on the literature review, I have identified the following variables that can explain housing affordability (see Table A1). The dynamics of these variables are shown in the figure below. Thin grey lines show how the corresponding variable has changed over time for each country. Thick black lines show the average trend, which is calculated using the median for periods when data are available for all countries. If data for at least one country are missing for a given year, the median is not computed for that year.

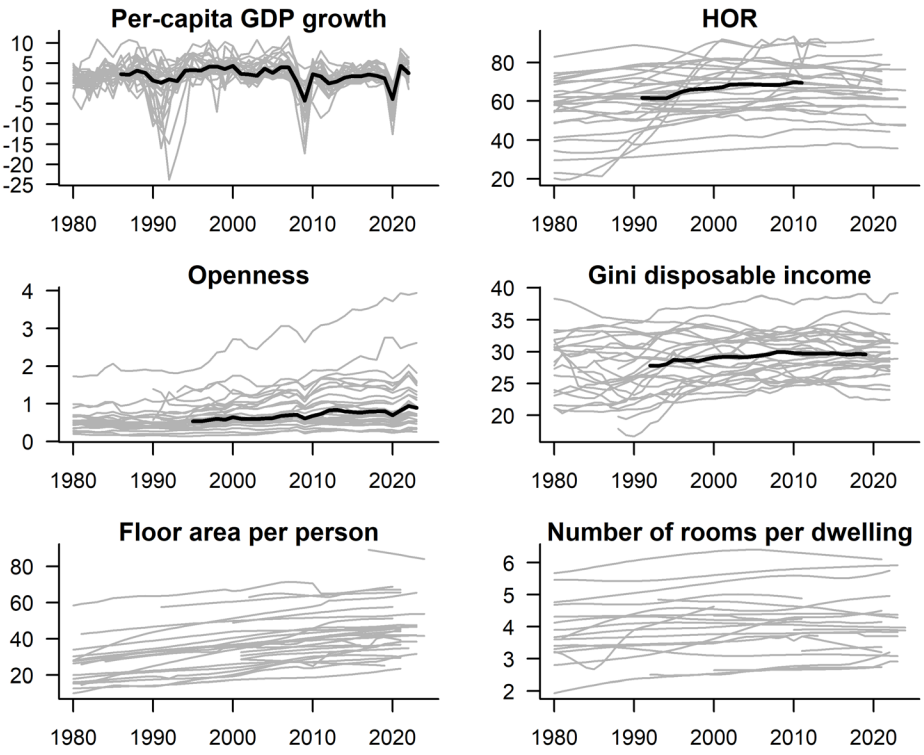

Figure 9: Dynamics of control variables, 1980-2024

Note: The grey lines represent individual countries, and the black curve shows the median for periods when data are available for all countries.

Growth rates of real GDP per capita remain relatively constant throughout the sample period. Homeownership rates increase until the Great Recession of 2008–2009 and then start to decline. Trade openness and the Gini index of disposable income show an upward trend. The last two indicators, average floor space per inhabitant and average number of rooms per dwelling, provide an indication of how housing standards have changed over time. Floor space per inhabitant is increasing in most countries, primarily due to smaller household sizes and, in countries such as Germany and Russia, the larger size of newly built dwellings. The number of rooms per dwelling has also increased over the long term.

Regulation indices: I analyze the possible impact of the following government policies on housing inequality: rent control, social housing, housing allowances and social expenditure (see Table A1). Social expenditure is a broader measure of the state's support for the population. This includes housing allowances where they are provided. These policies were chosen because they have been shown to affect inequality (see the literature review above on the determinants of inequality) and because the corresponding data are easily accessible. The figure below shows the evolution of the indicators for these policies. Once again, if data for at least one country are missing for a given year, the median (thick black line) is not computed or displayed for that year.

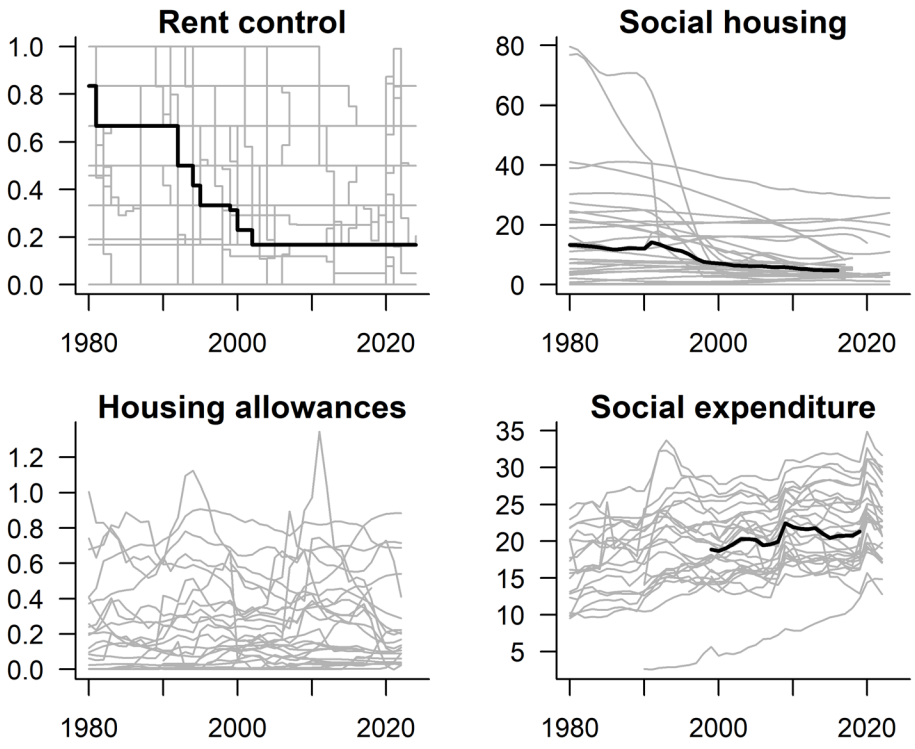

Figure 10: Intensity of housing regulations, 1980-2024

Note: The grey lines represent individual countries, and the black curve shows the median for periods when data are available for all countries.

During the period under consideration, the intensity of rent control and the share of social housing follow decreasing trends. This reflects the retrenchment of the state from the housing market. In 2020 there is a small increase in the intensity of rent control, which is related to the COVID-19 pandemic (Kholodilin 2021). Housing allowances and general social expenditure appear to have increased slightly over the sample period. Therefore, it seems that the subsidies provided directly to households are replacing rent control and social housing to some extent.

4.2 Estimation

I have multi-year and multi-country data. In addition, the data set is very unbalanced. For some countries, the observation period is very short. Therefore, I decided to use a panel data model with country fixed effects. To deal with the endogeneity problem, I use lagged values of the explanatory variables.

$$y_{it} = \alpha_1 x_{1i,t-1} + \alpha_2 x_{2i,t-1} + \cdots + \alpha_k x_{ki,t-1} + \eta_i + \varepsilon_{it}$$

where y_{it} is a measure of housing inequality in country i year t; $x_{ki,t-1}$ are standard determinants and regulations; η_i are country fixed effects; and ε_{it} is disturbance term.

The table below shows the results of the estimation of the panel data models. Column (1) reports the estimation results of a model with an average housing cost share. Columns (2)–(6) contain

models in which the dependent variable is the housing cost share at different quintiles. Finally, column (7) reports the results of estimating a model with the ratio of housing costs at the first and fifth quintiles. The notation used to denote the explanatory variables is explained in Table A1 in the Appendix.

Table 1: Estimation results for housing costs and housing cost inequality, with floor area and housing allowances

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
DLGDP_PC	-0.120***	-0.186***	-0.148***	-0.163***	-0.145***	-0.125***	-0.000
	(0.026)	(0.044)	(0.039)	(0.044)	(0.043)	(0.041)	(0.003)
gini_disp	-0.146**	0.131	0.073	0.076	-0.021	-0.191	0.017**
	(0.063)	(0.140)	(0.124)	(0.140)	(0.136)	(0.133)	(0.008)
HOR	-0.019	-0.305***	-0.269***	-0.287***	-0.254***	-0.194***	0.001
	(0.019)	(0.033)	(0.029)	(0.033)	(0.032)	(0.031)	(0.002)
Openness	1.794***	5.274***	2.911***	1.697*	0.116	0.712	0.235***
	(0.569)	(0.902)	(0.795)	(0.904)	(0.878)	(0.854)	(0.052)
Area2Person	0.508***	0.431***	0.423***	0.488***	0.444***	0.448***	-0.012***
	(0.019)	(0.065)	(0.057)	(0.065)	(0.063)	(0.062)	(0.004)
Rent_control	-0.542	-3.073**	-3.309***	-2.173*	-1.886	-3.366***	-0.001
	(0.512)	(1.214)	(1.069)	(1.215)	(1.180)	(1.149)	(0.070)
Soc_housing	-0.147***	-0.251***	-0.221***	-0.185***	-0.235***	-0.222***	0.001
	(0.038)	(0.065)	(0.058)	(0.066)	(0.064)	(0.062)	(0.004)
Housing_allowances	1.712**	2.506*	-0.710	1.817	3.748***	3.555***	-0.067
	(0.765)	(1.415)	(1.247)	(1.418)	(1.376)	(1.339)	(0.082)
Num. observations	644	351	347	347	347	351	351
R^2 adj.	0.696	0.517	0.478	0.456	0.438	0.419	0.087

- p < 0.1, ** p < 0.05, *** p < 0.01

Note: The numbers in parentheses are standard errors.

Although faster economic growth leads to lower housing costs, it does not affect housing cost inequality. Income inequality, as measured by the Gini index of disposable income, increases the proportion of income spent on housing at the lower income quintiles and reduces it at the highest income quintile, thus leading to a larger gap. Homeownership reduces the housing cost share for all income quintiles. Therefore, it has no impact on the housing cost gap. This is because owner-occupiers tend to have lower housing costs than tenants,[4] and home ownership rates are typically higher among higher-income households. Trade openness increases the housing cost share on average and for all quintiles, but the increase is lower for higher-income households. Consequently, the housing cost gap widens. This is consistent with the findings of Zore (2025), who found that trade openness leads to a higher housing price-to-income ratio. One possible explanation is that greater exposure to trade is accompanied by greater movement of people and, therefore, higher demand for housing. As expected, floor area per capita has a positive effect

[4] See, for example, Zhu et al. (2023).

on housing cost shares. This impact is particularly strong for higher-income households, who tend to occupy higher-quality dwellings.

Rent control and social housing reduce housing costs for all income groups. Lower-income households experience particularly significant reductions in their housing cost shares. The fact that higher-income households also benefit from these two policies can be explained by the income-blind nature of rent control: it applies to dwellings, not people. In the case of social housing, a means test is typically carried out at the outset, but not in subsequent years.[5] Therefore, as incomes rise, some households do not leave social housing. This tends to happen when the dwellings are located close to the city center or are of a high quality. In contrast, housing allowances increase the housing cost share, as the government subsidy enables households to spend more on housing. Surprisingly, households in all income brackets appear to be experiencing increases in housing costs, even though housing allowance recipients are usually subject to regular means testing. One possible explanation is that rising housing allowances can lead to overall housing rent increases, as multiple empirical studies have shown (Berger et al. 2008; Fack 2006; Hyslop and Rea 2019). However, none of these measures appears to have a statistically significant impact on the housing affordability gap.

Although housing allowances are a targeted way of supporting tenants (in some cases, also homeowners), other social benefits can also contribute to housing support for low-income households. For example, in Germany, recipients of unemployment benefits stopped receiving housing allowances in 2005 because their housing subsidies were incorporated into their unemployment benefits.[6] This led to a dramatic decline in the number of recipient households and the overall amount of housing allowances, though the level of effective housing support remained unchanged. Therefore, it would be reasonable to consider all forms of social subsidies. Therefore, I ran another set of regressions that included the percentage ratio of social expenditure to GDP instead of housing benefits.

Table 2: Estimation results for housing costs and housing cost inequality, with floor area and social expenditure

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
DLGDP_PC	-0.061**	-0.168***	-0.116***	-0.152***	-0.141***	-0.131***	-0.000
	(0.024)	(0.039)	(0.035)	(0.039)	(0.039)	(0.037)	(0.002)
gini_disp	0.123***	0.205	0.060	0.134	0.034	-0.157	0.020***
	(0.047)	(0.126)	(0.111)	(0.126)	(0.123)	(0.120)	(0.007)
HOR	-0.054***	-0.302***	-0.261***	-0.285***	-0.259***	-0.201***	0.001
	(0.017)	(0.031)	(0.028)	(0.031)	(0.031)	(0.030)	(0.002)

[5] There is sufficient anecdotal and statistical evidence to demonstrate this. See, for instance, an article by Noah Eastwood in The Telegraph “Revealed: 128,000 families in social housing among top earners in England: Tenants earning £71k capitalize on taxpayer-subsidized homes — despite record high waiting list” published on July 2, 2025.

[6] *Viertes Gesetz für moderne Dienstleistungen am Arbeitsmarkt vom* 24.12.2003.

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
Openness	2.722***	5.578***	2.850***	1.940**	0.660	1.136	0.233***
	(0.555)	(0.849)	(0.748)	(0.849)	(0.833)	(0.810)	(0.050)
Area2Person	0.473***	0.373***	0.382***	0.425***	0.393***	0.431***	-0.013***
	(0.023)	(0.060)	(0.053)	(0.060)	(0.059)	(0.058)	(0.004)
Rent_control	-0.540	-3.406***	-3.044***	-2.825***	-2.833***	-4.403***	0.044
	(0.463)	(1.076)	(0.947)	(1.075)	(1.055)	(1.026)	(0.063)
Soc_housing	-0.046*	-0.244***	-0.167***	-0.172***	-0.215***	-0.215***	-0.001
	(0.025)	(0.059)	(0.052)	(0.059)	(0.058)	(0.056)	(0.003)
Social_expenditure	0.169***	0.113*	0.072	0.070	0.091	0.027	0.000
	(0.033)	(0.066)	(0.058)	(0.066)	(0.065)	(0.063)	(0.004)
Num. observations	748	380	376	376	376	380	380
R^2 adj.	0.769	0.518	0.474	0.453	0.424	0.407	0.098

- p < 0.1, ** p < 0.05, *** p < 0.01

Note: The numbers in parentheses are standard errors.

The estimation results of this regression are similar to those of the previous one. The signs of the control variables have hardly changed. Rent control reduces housing costs for households in different income quintiles, but does not reduce the affordability gap. By contrast, social housing appears to narrow the housing cost gap between low- and high-income households: the corresponding coefficient is statistically significant at the 5% level. This effect is primarily achieved through a stronger reduction in the housing cost share of the poorest households. Social expenditure has a positive, statistically significant impact only on the average housing cost share.

As a robustness check, I estimated two additional sets of regressions. In these, I used the average number of rooms per dwelling instead of the average floor area per capita, and I used either housing allowances or social expenditure indicators as proxies for housing subsidies. The relationship between the average number of rooms and the average floor area per person is positive, but with a correlation coefficient of 0.684, it is far from perfect.

Table 3: Estimation results for housing costs and housing cost inequality, with rooms per dwelling and housing allowances

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
DLGDP_PC	-0.186***	-0.200***	-0.172***	-0.198***	-0.170***	-0.159***	0.002
	(0.039)	(0.045)	(0.035)	(0.033)	(0.030)	(0.029)	(0.003)
gini_disp	-0.080	0.506***	0.616***	0.746***	0.692***	0.547***	-0.029***
	(0.091)	(0.107)	(0.082)	(0.078)	(0.072)	(0.070)	(0.007)
HOR	0.045	-0.171***	-0.124***	-0.114***	-0.091***	-0.093***	-0.004
	(0.033)	(0.046)	(0.035)	(0.034)	(0.031)	(0.030)	(0.003)
Openness	1.735	8.365***	5.631***	5.722***	2.853***	3.851***	0.164*
	(1.153)	(1.359)	(1.042)	(0.993)	(0.918)	(0.885)	(0.086)
Room2Dwelling	5.734***	3.026***	3.025***	2.025***	1.087	-0.352	0.199***
	(0.703)	(0.983)	(0.752)	(0.716)	(0.663)	(0.641)	(0.062)
Rent_control	-6.635***	-6.679***	-6.921***	-5.820***	-5.392***	-5.780***	0.023

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
	(0.782)	(1.106)	(0.845)	(0.805)	(0.744)	(0.721)	(0.070)
Soc_housing	-0.391***	-0.588***	-0.635***	-0.648***	-0.755***	-0.782***	0.025***
	(0.077)	(0.093)	(0.071)	(0.067)	(0.062)	(0.060)	(0.006)
Housing_allowances	7.000***	2.255*	-2.279**	-0.085	0.845	0.466	0.264***
	(1.015)	(1.258)	(0.971)	(0.925)	(0.855)	(0.820)	(0.080)
Num. observations	586	323	313	313	313	323	323
R^2 adj.	0.450	0.505	0.590	0.636	0.634	0.623	0.119

- p < 0.1, ** p < 0.05, *** p < 0.01

Note: The numbers in parentheses are standard errors.

The estimation results differ from those of the previous two sets of regressions in several ways. Firstly, income inequality, as measured by the Gini index, now results in a smaller housing affordability gap. Secondly, as with floor area per person, an increase in the number of rooms leads to an increase in housing cost shares, but widens the affordability gap. Thirdly, social housing reduces overall housing costs and at all income quintiles, but widens the affordability gap. Fourthly, housing allowances increase the average housing cost share, but reduce it for households in the second income quintile, positively affecting the housing gap. The increasing housing affordability gap can be interpreted as a sign that, thanks to subsidies, lower-income households can now afford better housing.

The final set of regressions contains the average number of rooms and the share of social expenditure.

Table 4: Estimation results for housing costs and housing cost inequality, with rooms per dwelling and social expenditure

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
DLGDP_PC	0.039	-0.139***	-0.087***	-0.126***	-0.111***	-0.121***	0.002
	(0.030)	(0.042)	(0.033)	(0.030)	(0.028)	(0.027)	(0.003)
gini_disp	0.220***	0.495***	0.554***	0.691***	0.645***	0.517***	-0.025***
	(0.054)	(0.105)	(0.082)	(0.076)	(0.070)	(0.069)	(0.007)
HOR	0.087***	-0.161***	-0.053	-0.076**	-0.075***	-0.088***	-0.006**
	(0.022)	(0.042)	(0.033)	(0.030)	(0.028)	(0.027)	(0.003)
Openness	2.525***	7.730***	4.392***	4.811***	2.259***	3.194***	0.195**
	(0.917)	(1.294)	(1.016)	(0.937)	(0.862)	(0.849)	(0.084)
Room2Dwelling	-0.221	1.463	2.327***	0.939	0.262	-0.675	0.117*
	(0.482)	(0.916)	(0.718)	(0.662)	(0.608)	(0.601)	(0.060)
Rent_control	-3.404***	-5.941***	-5.945***	-4.894***	-4.744***	-5.630***	0.024
	(0.544)	(1.116)	(0.874)	(0.806)	(0.741)	(0.732)	(0.073)
Soc_housing	-0.494***	-0.522***	-0.495***	-0.537***	-0.672***	-0.743***	0.022***
	(0.046)	(0.092)	(0.072)	(0.067)	(0.061)	(0.060)	(0.006)
Social_expenditure	0.791***	0.236***	0.168***	0.222***	0.195***	0.087**	0.006
	(0.030)	(0.062)	(0.049)	(0.045)	(0.042)	(0.041)	(0.004)

	HCost2Consum	HC2C_qnt1	HC2C_qnt2	HC2C_qnt3	HC2C_qnt4	HC2C_qnt5	HC_qnt_ratio
Num. observations	756	338	328	328	328	338	338
R^2 adj.	0.766	0.507	0.567	0.643	0.645	0.615	0.083

- p < 0.1, ** p < 0.05, *** p < 0.01

Note: The numbers in parentheses are standard errors.

These regressions confirm the estimation results of regressions involving the number of rooms and housing allowances. Social housing appears to widen the gap in housing costs between low- and high-income households. Interestingly, social expenditure now has a uniformly positive effect on housing cost shares at all income quintiles without changing the housing affordability gap.

5 Conclusion

In this study, I examined the long-term evolution of housing cost burden, as well as the potential impact of government regulations on it. Specifically, I examined measures of average housing affordability for different income quintiles, as well as the affordability gap between the lowest- and highest-income groups. I discovered several stylized facts. Firstly, the housing cost share increased in most countries after World War II. Secondly, between the 1980s and the 2010s, the affordability gap between the lowest- and highest-income households increased, but then stabilized and possibly even decreased slightly. Thirdly, generally speaking, lower-income households in rich countries tend to spend a relatively larger proportion of their income on housing than higher-income households.

Estimated panel data regressions showed that housing policies such as rent control, social housing and housing allowances affect housing cost shares at different income levels. However, these policies do not appear to reduce the gap between the poorest and richest 20% of households. This can partly be explained by the fact that rent control and social housing policies do not always target low-income households effectively. This can result in government support being misallocated.

Appendix

The table below provides the definitions, sources and descriptive statistics of all the variables used in the regression analysis.

Table A1: Dependent and explanatory variables

Variable	Definition	Source	Minimum	Mean	Maximum
HCost2Consum	Average housing cost share	National statistical offices	8.70	23.93	39.30
HC2C_qnt1	Housing cost share for quintile 1	National statistical offices	16.43	31.95	46.64

Variable	Definition	Source	Minimum	Mean	Maximum
HC2C_qnt2	Housing cost share for quintile 2	National statistical offices	13.57	29.51	42.30
HC2C_qnt3	Housing cost share for quintile 3	National statistical offices	11.98	27.14	40.09
HC2C_qnt4	Housing cost share for quintile 4	National statistical offices	10.22	25.14	39.13
HC2C_qnt5	Housing cost share for quintile 5	National statistical offices	8.54	22.25	40.10
HC_qnt_ratio	Ratio of housing cost shares between the 1st and 5th quintiles	Own calculation	0.95	1.53	2.47
Rent_control	Index of rent control intensity	Kholodilin (2020)	0.00	0.40	1.00
Soc_housing	Share of social housing in the total housing stock (%)	Kholodilin, et al. (2022)	0.00	10.70	79.64
Housing_allowances	Public spending on housing allowance to GDP (%)	OECD	0.00	0.27	1.34
Social_expenditure	Social expenditure to GDP, including health, old age, incapacity-related benefits, family, active labor market programmes, unemployment, and housing (%)	OECD	9.52	20.51	34.88
DLGDP_PC	Growth rate of real per-capita GDP (%)	Maddison Project Database	-23.85	1.87	11.69
Openness	Ratio of trade (exports plus imports) to GDP (%)	Macrofinance and Macrohistory Lab and World Bank	0.13	0.82	3.94
gini_disp	Gini index, disposable income	World Inequality Database and Solt (2020)	16.70	28.69	39.20
HOR	Homeownership rate (%)	Kholodilin and Kohl (2023a)	19.50	61.48	93.60
Area2Person	Floor area per person (m2)	National statistical offices	12.80	42.68	71.45
Room2Dwelling	Average number of rooms per dwelling	National statistical offices	1.93	3.87	6.70

The table below contains a list of all the studies on the determinants of inequality that have been examined here. The first column shows the corresponding study. The second column reports the place and time period of the investigation. The third column describes the type of data (micro- or macrodata) and the level of aggregation used (households, dwellings, municipalities or states). The estimation methods are reported in column four. Columns five and six show the dependent and explanatory variables, respectively. Finally, column seven shows the direction of impact of the explanatory variables on the dependent variable: If the value in the "Effect sign" column is 1 or -1, the effect is positive or negative, respectively.

Table A2: Empirical studies on determinants of inequality

Study	Place and period	Type of data	Method	Dependent variable	Determinant	Effect sign
Afandi et al. (2017)	32 provinces of Indonesia, 2007–2013	macro: Statistics Indonesia	panel model	Gini index	poverty, education, financialization	1, 1, -1
Agnello and Sousa (2014)	18 countries,	macro: Gini inequality index from Standardized World Income Inequality Database; GDP and the degree of	panel model	Gini index	public spending, tax revenue, fiscal consolidation, growth, growth_square, trade openness	-1, -1, 1, 1, -1, -1

Study	Place and period	Type of data	Method	Dependent variable	Determinant	Effect sign
	1978–2009	openness from World Development Indicators of the World Bank and Penn World Table				
Aizawa et al. (2020)	10 Asian countries and USA, 2012–2017	micro: data from Demographic and Health Survey project; American Housing Survey	linear regression	housing adequacy gap	population, economic inequality, housing affordability	1, 1, -1
Amjadi and Shakibai (2018)	Iranian cities, 2006–2016	micro: household income and expenditure surveys	linear regression	housing conditions gap, affordability gap, housing cost gap	income inequality, income inequality, income inequality	1, 1, 1
Apergis et al. (2014)	US states, 1981–2004	macro: Gini index from Current Population Survey; Fraser Institute Economic Freedom index; real income from Bureau of Economic Analysis; school enrollment from National Center for Education Statistics	panel error correction model	Gini index	economic freedom, education, income, population growth	-1, -1, -1, 1
Asteriou et al. (2014)	EU-27 countries, 1995–2009	macro: Eurostat; IMF; UNCTAD; World Bank	panel model; GMM	Gini index	FDI, trade openness, technology	1, -1, 1
Bahmani-Oskooeee t al. (2008)	16 countries, 1963–1999	macro: Penn World Table	error-correction model	Gini index	growth, trade openness	0, 0
Baker et al. (2016)	Australia, 2002–2012	micro: Household, Income and Labour Dynamics in Australia (HILDA) Survey	dynamic random-effects panel model	spatial inequality	housing affordability	-1
Ben-Shahar and Warszawski (2016)	Israel, 1992–2011	micro: individual household socio-economic, demographic and dwelling unit characteristics from Household Income and Expenditure Surveys; all housing transactions from Israel Tax Authority; macro: macroeconomic indicators from Bank of Israel and Israel Central Bureau of Statistics	linear regression	housing affordability Gini, housing affordability Atkinson index	price-to-income ratio, construction, GDP, price-to-income ratio, construction, GDP	1, -1, 1, 1, -1, 1
Ben-Shahar et al. (2019)	Israel, 1998–2015	micro: individual household socio-economic, demographic, locational, and dwelling unit characteristics from Household Income and Expenditure Surveys	hedonic regression; linear regression	consumption-adjusted housing affordability measure	housing price, income, periphery	1, 1, 1
Bergh and Nilsson (2010)	80 countries, 1970–2005	macro: Standardized World Income Inequality Database; KOF Index of Globalization; Economic Freedom Index of the Fraser institute	GMM; panel model	Gini index	economic freedom, education, aging, income	1, 1, 0, 1
Berisha and Meszaros (2020)	USA, 1929–2009	macro: interest rate, inflation, and income growth; measures of wealth inequality from World Inequality Database	vector autoregression	wealth Gini index, wealth shares	growth, inflation, interest rate, growth, inflation, interest rate	-1, -1, -1, -1, -1, -1
Biewen and Juhasz (2012)	Germany, 1999–2005	micro: SOEP	semiparametric decomposition technique	Gini index, top income share, Theil entropy index, mean log deviation, FGT	unemployment benefit, income tax, household size, labor income inequality, unemployment benefit, income tax, household size, labor income inequality, unemployment benefit, income tax, household size, labor income inequality, unemployment benefit, income tax, household size, labor income inequality, unemployment benefit, income tax, household size, labor income inequality	-1, 0, 0, 1, -1, 0, 0, 1, -1, 0, 0, 1, -1, 0, 0, 1, -1, 0, 0, 1
Biewen, Ungerer, and Löffler (2019)	Germany, 2005–2011	micro: SOEP	descriptive analysis; flexible regression	Gini index, top income share, mean log deviation	household size, aging, transfer system, household size, aging, transfer system, household size, aging, transfer system	0, 0, 0, 0, 0, 0, 0, 0, 0
Bucevska (2019)	EU candidate countries, 2005–2017	macro: inequality index from Poverty and Equity Data Portal of the World Bank Group; macroeconomic and demographic variables from EUROSTAT	panel model	Gini index	unemployment, development, investment share, government debt, terms of trade, inflation, population growth, education	1, 1, -1, -1, 0, 0, 1, -1

Study	Place and period	Type of data	Method	Dependent variable	Determinant	Effect sign
Calderón and Chong (2001)	102 countries, 1960–1995	macro: household-based income distribution from Deininger and Squire (1996); terms of trade; effective real exchange rate; Sachs et al. (1995) external indicator; volume of trade; ratios of exports of non-fuel primary commodities and manufacturing goods as a percentage of total exports; balance of payments restrictions from Grilli and Milesi-Ferretti (1995); black market premium on foreign exchange	dynamic panel model; GMM	Gini index	capital controls, exchange rate, trade openness, education	-1, 1, -1, -1
Checchi and Garcia-Peñalosa (2008)	16 countries, 1969–2004	macro: Luxembourg Income Study	OLS; Oaxaca decomposition	Gini index, top income share	employment protection, trade openness, investment share, employment protection, trade openness, investment share	-1, 0, 0, -1, 0, 0
Chong (2004)	98 countries, 1960–1997	macro: Deininger and Squire (1996); Freedom House; Polity IV	dynamic panel model; GMM	Gini index, top income share	democracy, democracy_square, income, education, democracy, democracy_square, income, education	1, -1, 0, -1, 1, -1, 0, -1
Coibion et al. (2017)	USA, 1980–2008	macro: Consumer Expenditure Survey	local projection	Gini index, top income share	monetary policy, monetary policy	-1, -1
De Gregorio and Lee (2002)	49 countries, 1960–1990	macro: Deininger and Squire (1996)	seemingly-unrelated-regression	Gini index	income, income_square, public spending, education	1, -1, -1, -1
Dewilde and De Decker (2016)	13 West European countries, 1995 and 2012	macro: residential mortgage debt to GDP (financialization; Mortgage Market Liberalization Index from IMF; housing affordability from ECHP and EU-SILC	hierarchical cluster analysis; linear regression	affordability gap, housing conditions gap	financialization, financialization	1, -1
Dreher and Gaston (2008)	57 countries, 1970–2000	macro: University of Texas Inequality Project; UNIDO; OECD	dynamic panel model; GMM	Gini index	globalization, democracy, income, income_square	0, 0, 0, 0
Dustmann et al. (2022)	Germany, 1993, 1998, 2003, 2008, 2013	micro: data on 40,000–50,000 households from Einkommens- und Verbrauchsstichprobe	Blinder-Oaxaca decomposition	affordability gap	homeownership, household size, income, housing quality	1, 1, 1, 0
Foster and Kleit (2015)	US counties in the lower 48 states, 1980–2010	macro: U.S. Department of Housing and Urban Developmen; U.S. Census Bureau County Summary; U.S. Census Bureau American Community Survey	robust multivariate regression	Gini index, wealth Gini index	homeownership, subprime lending, housing affordability, income, income_squared, unemployment, homeownership, subprime lending, housing affordability, income, income_squared, unemployment	0, 0, 0, -1, 1, 0, 0, 0, 0, -1, 1, 0
Fuller et al. (2020)	13 OECD countries, 1970–2015	macro: World Income Database	error correction model	wealth-income ratio	house price, homeownership, savings rate, stock price, left-wing government, trade union density, wage coordination, public spending, tax rate	1, 0, 0, 1, 0, 0, 0, 0, 0
Furceri and Ostry (2019)	108 countries, 1980–2013	macro: International Country Risk Guide; World Development Indicators	Bayesian Model Averaging, weighted-average least squares	Gini index	growth, education, financial development, aging, technology, trade openness, financial globalization, public spending, unemployment	1, -1, 1, 0, 0, -1, 1, -1, 1
Ganaie et al. (2018)	India, 1963–2007	macro: World Bank; WIDER	error-correction model; ARDL	top income share, estimated household income inequality	growth, public spending, trade openness, inflation, growth, public spending, trade openness, inflation	1, -1, -1, -1, -1, -1, -1, -1
Gaston and Rajaguru (2009)	Australia, 1970–2001	macro: income inequality from Australian taxation statistics; KOF index of social globalization; Australian National Accounts; Trade Union Statistics, Australia	vector autoregression	Gini index	globalization, technology, terms of trade, urbanization, trade union density, minimum wage	1, 1, -1, -1, -1, -1
Hailemariam et al. (2021)	17 OECD countries, 1870–2016	macro: Jordà–Schularick–Taylor Macro-history Database	panel vector autoregression	Gini index, top income share	growth, financial development, education, growth, financial development, education	1, -1, -1, 1, -1, -1
Hess et al. (2022)	USA, 1980–2017	micro: Panel Study of Income Dynamics	linear probability model;	affordability gap	black, female, unemployment, share of new housing, number of rooms, poverty, homeownership, vacancy rate, share single-family houses	1, 1, 1, 1, 0, 1,

Study	Place and period	Type of data	Method	Dependent variable	Determinant	Effect sign
			stratified logit			0, 1, 0
Heylen and Haffner (2012)	Flanders and Netherlands, 2005–2006	micro: Housing Survey of Kenniscentrum voor Duurzaam Woonbeleid; WoON 2006 Housing Survey; income data from Dutch tax records	residual income approach	Gini index	housing allowance, housing allowance	-1, 1
Jaumotte et al. (2013)	51 countries, 1981–2003	macro: income inequality measures from World Bank Povcal and Luxemburg Income Studies	panel model	Gini index	FDI, technology, trade openness	1, 1, -1
Kholodilin and Kohl (2023b)	16 countries	macro: Macrohistory database, World Inequality Database	panel vector autoregression	Gini index, top income share	rent control, aging, top income tax, education, public spending, trade openness, rent control, aging, top income tax, education, public spending, trade openness	-1, 0, 0, 0, -1, 0, -1, 0, -1, 0, -1, 0
Kuznets (1955)	6 countries, 1880–1948	macro: various sources	descriptive analysis	top income share	income, income_square	1, -1
Lee et al. (2013)	South Korea, 1980–2012	macro: ECOS of Bank of Korea and KOSIS of Statistics Korea	cointegration model	Gini index	growth, public spending, investment share, aging	0, 0, -1, 1
Li (2012)	Guangzhou, 1996–2005	micro: own household surveys on housing conditions	hedonic regression; descriptive decomposition	housing conditions Gini, housing conditions Theil entropy index	rationing, rationing	0, 0
Li et al. (1998)	112 countries, 1947–1994	macro: World Development Report	ANOVA; LSDV; panel model	Gini index	education, civil liberty, financial development	-1, 1, -1
Lim and Sek (2014)	31 countries, 1990–2011	macro: World Bank	panel model; simultaneous equations mode; GMM	Gini index	growth, education, trade openness, investment price	1, 0, 0, 0
Muller (1988)	55 countries, 1965–1975	macro: World Bank; Bollen Political Democracy Index	regression	top income share	stability of democracy, democracy	-1, 0
Peichl et al. (2012)	Germany, 1991–2007	micro: GSOEP	decomposition; re-weighting procedure	Gini index, generalized entropy	household size, employment, transfer system, household size, employment, transfer system	-1, 1, -1, -1, 1, -1
Perugini and Martino (2008)	European regions, 1995 and 2000	macro: Luxembourg Income Study	spatial model	Gini index, top income share	development, technology, public spending, labor market performance, development, technology, public spending, labor market performance	0, 1, -1, 0, 0, 1, -1, 0
Petach (2022)	USA, 1980–2016	micro: household-level extracts from Census Integrated Public Use Microsample database; Decennial Census; American Community Survey	counterfactual simulations	affordability gap	income inequality	1
Reuveny and Li (2003)	69 countries, 1960–1996	macro: World Bank	OLS	Gini index	trade openness, democracy, income, income_square, FDI	-1, -1, 0, 0, 1
Rodríguez-Pose and Tselios (2009)	regions of 13 EU countries, 1995–2000	macro: ECHP; Eurostat	dynamic panel model; GMM; spatial model	Theil entropy index	education, aging, urbanization, female participation, unemployment, financialization	1, -1, -1, -1, 1, NA
Roine et al. (2009)	16 countries	macro: Mitchell, WDI, Madsen	panel model, first differenced GLS, dynamic first	top income share	growth, financial development, trade openness, public spending, tax progressivity	1, 1, 0, -1, -1

Study	Place and period	Type of data	Method	Dependent variable	Determinant	Effect sign
			differences			
Rubin and Segal (2015)	USA, 1953–2008	macro: inflation and unemployment rates from US Bureau of Labor Statistics; market return from The Center for Research and Security Prices; US and UK GDP per capita growth rates from Penn Tables; income distribution data from Piketty and Saez (2006)	2SLS, GMM	top income share	growth, stock market return	1, 1
Sauer et al. (2023)	73 countries, 1981–2010	macro: UNU-WIDER; World Income Inequality Database Version 3.4; OECD, Eurostat; Luxembourg Income Study (LIS) for high-income countries; Transmonee by UNICEF for Eastern European countries; SEDLAC for Latin American countries; World Bank	panel model; GLS	Gini index	labor share, FDI, tax rate, education, private debt, minimum wage, unemployment benefit, trade union density	-1, -1, -1, 1, 1, -1, -1, -1
Shin and Shin (2013)	153 countries, 1978–2010	macro: OECD; IMF	panel model	Gini index, top income share, estimated household income inequality	growth, trade openness, financial opennes, technology, public spending, growth, trade openness, financial opennes, technology, public spending, growth, trade openness, financial opennes, technology, public spending	-1, -1, 0, 1, -1, -1, -1, -1, 1, -1, -1, -1, -1, 0, -1
Signor et al. (2019)	27 Brazilian states, 1996–2015	macro: Brazilian household survey (PNAD)	panel model, system GMM	Gini index	formal jobs, education, growth, public spending	-1, 1, 0, -1
Thalassinos et al. (2012)	13 EU countries, 2000–2009	macro: inequality index and employment index from Eurostat; inflation rate, openness and GDP from OECD	panel model	Gini index	inflation, employment rate, trade openness, income	1, 1, 1, -1
Timmons (2010)	143 countries, 1960–2007	macro: WIID	OLS with clustered standard errors; panel model; instrumental variables; error correction model	Gini index	democracy, FDI, trade openness, income, income_square	-1, 1, 0, 0, 0
Tridico (2018)	25 OECD countries, 1990–2013	macro: World Bank; OECD	panel model, GLS	Gini index	financialization, employment protection, trade union density, public spending	1, -1, -1, -1
Tunstall (2015)	England and Wales, 1911–2011	macro: data from Census 1911; General Register Office census reports 1913, 1925, 1935, 1956, 1964; www.casweb.mimas.ac.uk; www.nomisweb.co.uk	descriptive analysis	housing conditions gap, housing conditions Gini	NA, NA	NA, NA
Yi and Huang (2014)	Chinese cities, 2000–2010	macro: Census and 1% Survey	descriptive analysis	housing conditions CV, housing conditions Theil entropy index	NA, NA	NA, NA

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