Does income inequality affect housing affordability? Evidence from OECD countries

Mahamoudou ZORE

Laboratoire d'Economie de Dijon (LEDi), Univ. de Bourgogne-Franche-Comté

Abstract

This paper investigates the causal effect of income inequality on housing affordability in 35 OECD countries from 2000 to 2021. Using an instrumental variables approach, we address endogeneity concerns by leveraging two exogenous instruments: tax progressivity (the marginal tax rate) and R&D expenditures. Our findings indicate that higher income inequality significantly deteriorates housing accessibility by increasing housing prices relative to income. The effect is particularly pronounced in low-growth periods, where stagnant wages fail to offset rising housing costs. We further explore key transmission mechanisms, including speculative investment, credit constraints, and inflation, which amplify the affordability crisis. Robustness checks using alternative instruments and measures of inequality confirm the stability of our results. Additionally, restricting the sample to European countries yields consistent findings, reinforcing the broader relevance of the conclusions. These insights highlight the need for policy interventions that address inequality as a structural determinant of housing affordability, including progressive taxation, financial regulations, and targeted housing policies.

Keywords: Housing Accessibility; Income Inequality, Real Estate policies, Instrumental Variables, OECD countries

1 Introduction

Housing affordability has become a growing concern around the world, particularly in OECD countries, as house prices have risen faster than wages, putting home ownership increasingly out of reach for many households (Glaeser and Gyourko, 2018; Wetzstein, 2017). This affordability crisis has been driven by multiple factors, including low interest rates, urbanisation and supply constraints. In response, policymakers have implemented a range of measures to improve access to housing, including mortgage subsidies, rent controls, and social housing programmes. However, these policies often fail to fully address the structural determinants of affordability, in particular the role of income inequality (Kleshcheva, 2021). Rising house prices relative to household incomes create a gap between affordable housing and housing accessibility, making the situation even more difficult for low-income households (Azmi and Bujang, 2021). So, while steps have been taken to improve housing affordability, it is essential to recognise and address the structural determinants, including income inequality, in order to achieve sustainable solutions.

Income inequality is an issue of widespread concern in OECD countries (Goda, 2016), with the concentration of wealth increasingly shaping economic and social structures(Tsounta, 2015). For instance, income inequality has profound implications for housing markets, yet it is often overlooked in policy debates. As wealth becomes more concentrated at the top, high-income households have greater purchasing power to buy property, increasing housing demand and pushing up prices(Goda et al., 2019; Hailemariam et al., 2021). This in turn pushes lower-income households further away from home ownership and exposes them to rising rents. In addition, inequality can encourage speculative investment in property, fueling price inflation and exacerbating affordability challenges (Fligstein, 2017; Türk and Gurden, 2022). On the other hand, some argue that income inequality may dampen housing demand in lower-income segments, thereby stabilising prices in certain markets (Goldstein and Hastings, 2019). Given these potential mechanisms, understanding the causal impact of income inequality on housing affordability is essential for designing effective housing policies and tax frameworks. At present, the causal relationship between income inequality and housing affordability remains unclear.

The literature highlights various mechanisms through which disparities in income distribution affect property markets. One key argument is that rising inequality increases demand

for high-end properties, driving up prices and making housing less affordable for lower-income groups, particularly in supply-constrained markets (Hilber and Vermeulen, 2016). Moreover, inequality alters the composition of housing supply, as developers respond to demand by prioritising luxury housing over affordable units, reinforcing market segmentation (Teng and Moghaddasi Kelishomi, 2024). Institutional and economic contexts shape these effects. In rigid housing markets, inequality tends to fuel price inflation, exacerbating affordability problems, while in more flexible markets it can lead to speculative investment or financial instability, ultimately dampening prices (Zhang et al., 2016; Kösem, 2019). Empirical studies in Europe confirm that inequality increases the housing burden for low-income households, while wealthier groups allocate a smaller share of their income to housing, deepening economic disparities (Dustmann and Zimmermann, 2021). Beyond income inequality, structural factors such as urbanisation, financialisation and regulatory constraints affect affordability. The concentration of economic opportunities in urban centres intensifies price pressures and exacerbates socio-spatial segregation (Van Nieuwerburgh and Weill, 2010). Moreover, the expansion of luxury housing markets, often driven by rising top incomes, diverts supply away from affordable housing options (Bertrand and Morse, 2016). Finally, restrictive housing regulations can exacerbate the effects of inequality by limiting supply responses to rising demand, leading to persistent affordability challenges (Matlack and Vigdor, 2008).

As shown in these previous studies, there is a link between income inequality and housing affordability. These studies highlight the impact of high incomes on rising house prices and market segmentation. However, due to the correlational nature of these analyses, a clear causal link remains to be established. One of the main challenges in analysing this relationship is endogeneity. Housing affordability and income inequality are likely to be interdependent: while inequality can shape housing markets, the affordability crisis itself influences wealth accumulation and access to homeownership. This bidirectional relationship complicates empirical analysis, as standard regression techniques may produce biased estimates due to omitted variables, reverse causality and measurement error. To address this concern, we employ an instrumental variables approach using two original instruments: the marginal tax rate at 100% of the average wage (AW100) and R&D expenditure as a share of GDP. The marginal tax rate captures tax progressivity and redistribution policies that affect income inequality but are unlikely to have a direct impact on housing markets. Meanwhile, R&D

expenditure reflects structural economic changes that affect income distribution through technological progress and wage polarisation, without directly affecting house prices. Whilst there exists the possibility that economic growth driven by research and development (R&D) may result in an increase in housing demand within high-tech urban hubs, this effect is considered to be indirect and localised. In order to mitigate this risk, the instrument's effect on inequality is isolated from potential spillovers into housing markets by controlling for urbanisation rates and GDP per capita.

The study is based on a panel dataset covering 35 OECD countries over the period 2000-2021. The data are sourced from the OECD, the World Inequality Database (WID), and the World Bank, encompassing key economic, fiscal, and housing market indicators. The dependent variable, housing affordability, is measured as the housing price-to-income ratio, capturing accessibility disparities. Income inequality is assessed using multiple measures, including the Gini coefficient, Top 1%, Top 5%, and Top 10% income shares. Using an instrumental variables approach, the results confirm a causal link: higher income inequality leads to rising house prices relative to income, worsening accessibility. This effect is particularly strong in low-growth periods, where stagnating wages fail to offset rising housing costs. Mechanisms such as speculative investment, credit market distortions, and inflation amplify the affordability crisis. Robustness checks using alternative instruments (marginal tax rate at 167% of average wage) and different inequality measures (Palma ratio, Bottom 40%) confirm the stability of results. Furthermore, excluding non-European countries yields consistent findings, reinforcing the generalizability of the conclusions.

The remainder of this paper is structured as follows: Section 2 describes the data and outlines the empirical strategy. Section 3 presents the results. Finally, Section 4 discusses policy implications and concludes the paper.

2 Methodology

2.1 Data presentation

This study utilises data from 35 OECD countries (the list of countries is given in Table 8 in appendix) spanning the period from 2000 to 2021, obtained from the OECD, the World Inequality Database (WID), and the World Bank. The time period 2000-2021 is determined by

data availability, as not all variables are consistently reported across countries over longer periods. The dependent variable, housing affordability, is measured as the housing price-to-income ratio, reflecting accessibility disparities. Income inequality, the endogenous variable, is captured through the Gini coefficient, Top 1%, Top 5%, and Top 10% income shares. To address endogeneity, two instrumental variables are employed: the marginal tax rate at 100% of the average wage (AW100) and R&D expenditures as a percentage of GDP. The marginal tax rate is a reflection of tax progressivity and redistribution, while R&D expenditures are a measure of structural economic factors influencing income distribution through technological progress and wage polarisation. The model also incorporates controls for key macroeconomic conditions, including GDP growth, credit (financial market development), tax revenue, urbanization (housing market pressures), trade openness, and unemployment (labor market stability). The complete list of variables and their descriptions can be found in the Table 1 below.

Table 1: List of Variables, Description, and Sources

Variable Name	**Description**	**Source**
affordability	Housing affordability index (ratio of housing prices to income)	OECD
real_h_prices	Real housing price index	OECD
Urban_pop	Urban population (% of total population)	World Bank WDI
trade	Trade openness (% of GDP)	World Bank WDI
fdi	Foreign direct investment (% of GDP)	World Bank WDI
growth	GDP growth rate (%)	World Bank WDI
gini	Gini coefficient (income inequality)	OECD
top1	Income share held by top 1%	World Inequality Database
top5	Income share held by top 5%	World Inequality Database
top10	Income share held by top 10%	World Inequality Database
top20	Income share held by top 20%	World Inequality Database
Exp_RD	Gross domestic expenditure on R&D (% of GDP)	OECD
MR_AW100	Marginal tax rate on income at 100% of average wage	OECD
inflation	Consumer price index (CPI) inflation	OECD
credit	Domestic credit to private sector (% of GDP)	World Bank WDI
unemp	Unemployment rate (%)	OECD
tax	Tax revenue (% of GDP)	OECD
broadm	Broad money supply growth (% of GDP)	World Bank
inflation	General price level (alternative inflation measure)	OECD

2.2 Descriptive statistic

Table 2 presents the summary statistics for the variables utilised in the study. The affordability index, measured as the ratio of housing prices to income, has an average value of 104.15, indicating that, on average, housing costs slightly exceed annual incomes. However, it should be noted that affordability varies significantly across countries, with a minimum value of 58.48 suggesting relatively affordable markets, and a maximum of 214.31 reflecting extreme housing cost burdens in some areas. A similar pattern is exhibited by the real housing prices index, with an average index of 101.72. The lowest recorded value is 43.49, indicating substantial housing market contractions in some countries, while the maximum recorded value is 173.89, highlighting extreme housing price surges in certain economies.

In addition, income inequality, which is measured by the Gini coefficient, has a mean of 0.49, with values ranging from 0.33 to 0.75. This wide range highlights the substantial disparities in income distribution across OECD countries. While some economies maintain relatively equal income distributions, others exhibit high levels of inequality, with a significant share of national income concentrated among the wealthiest households. Further breakdowns of income concentration reveal that the top 1% of earners hold, on average, 13% of total income, with a peak of 28%. The top 10% account for 38% on average, with a maximum of 67%, indicating extreme wealth concentration in some countries. These measures serve to reinforce the notion that economic gains are disproportionately accumulated at the upper echelons of the income distribution.

In terms of macro variables, gross domestic product (GDP) growth averages at 2.16%, with some economies experiencing a decline of -14.84%, while others demonstrate rapid expansion at 24.48%. Inflation is typically low, averaging 2.41%, but ranges from -1.68% (deflation) to 15.79% (high inflation). Foreign Direct Investment (FDI) inflows exhibit significant variability, with an average of 4.99% of GDP, ranging from -117.37% (capital outflows) to 234.25% (large inflows). The credit to the private sector, a pivotal factor in housing markets, stands at an average of 98.44% of GDP, yet this varies from 17.97% to 304.58%, reflecting disparities in financial sector development. The average unemployment rate is 7.94%, with rates as low as 2.02% in certain countries and as high as 28.77% in others. Finally, the tax burden, measured by the marginal tax rate at 100% of the average wage (AW100), stands at an average of 34.40%, ranging from 0% to 72.09%. This highlights the variance in tax policies

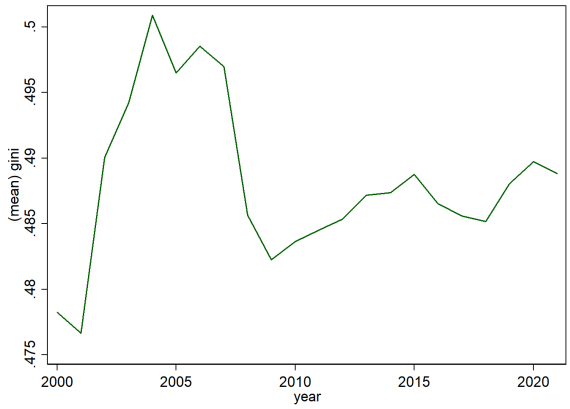
across different regions.

Table 2: Descriptive statistics

Variable	N	Mean	SD	Median	Min	Max
affordability	782	104.15	19.83	101.12	58.48	214.31
real_h_prices	782	101.72	23.08	100.22	43.49	173.89
Urban_pop	956	75.78	11.98	77.11	50.75	100.00
trade	782	92.22	53.93	77.33	19.56	393.14
fdi	782	4.99	14.36	2.70	-117.37	234.25
growth	782	2.16	3.48	2.36	-14.84	24.48
gini	782	0.49	0.09	0.47	0.33	0.75
top1	782	0.13	0.04	0.11	0.06	0.28
top5	782	0.27	0.07	0.25	0.17	0.54
top10	782	0.38	0.09	0.35	0.25	0.67
top20	782	0.52	0.08	0.50	0.39	0.80
Exp_RD	844	1.72	1.03	1.56	0.14	5.71
MR_AW100	836	34.40	12.95	33.25	0.00	72.09
credit	722	98.44	45.25	94.56	17.97	304.58
unemp	782	7.94	4.53	6.82	2.02	28.77
tax	741	20.40	5.65	21.16	7.90	36.50
broadm	406	8.87	10.54	7.42	-25.55	125.03
inflation	782	2.39	2.31	2.09	-4.45	15.79

The figures below reveal significant trends in income inequality and housing affordability. The Gini coefficient has increased sharply since the early 2000s, peaking around 2005, before declining until 2010, and then rising steadily over the past decade (Figure 1a). This suggests cyclical fluctuations in income distribution, potentially influenced by economic crises and policy changes. Concurrently, housing affordability, gauged by the price-to-income ratio, displays a congruent trend, exhibiting a pronounced increase prior to the 2008 financial crisis, a subsequent stabilisation, and an uptick since 2015. This trajectory mirrors that of real housing prices, which exhibited a substantial increase prior to the crisis, a temporary correction, and then sustained growth in recent years (Figure 1b).

Figure 1: Trends in Income Inequality and Housing Affordability



(a) Evolution of the Gini coefficient (2000-2021)



(b) Evolution of Housing Affordability and Real Housing Prices (2000-2021)

2.3 Empirical Methodology

2.3.1 Model Specification

To analyze the impact of income inequality on housing affordability, we consider the following baseline regression model:

$$Affordability_{it} = \alpha + \theta Inequality_{it} + \beta X_{it} + \epsilon_{it} \tag{1}$$

where $Affordability_{it}$ represents the ratio of housing prices to income in country i at time t. $Inequality_{it}$ is a measure of income inequality (e.g., Gini coefficient or top 10% income share). X_{it} is a vector of control variables, including GDP per capita, interest rates, urbanization rate, and unemployment rate. ϵ_{it} is the error term capturing unobserved factors.

The key coefficient of interest is θ, which measures the effect of income inequality on housing affordability. If $\theta > 0$, it implies that higher income inequality deteriorates affordability by increasing housing prices relative to income.

Ordinary Least Squares (OLS) estimation of Equation 1 is susceptible to bias and inconsistency due to endogeneity. Firstly, reverse causality arises because housing affordability can influence income inequality. Rising housing costs tend to increase wealth disparities by benefiting property owners while limiting access for lower-income households. Secondly, omitted variable bias may distort the estimates, as unobserved factors such as financial regulations, credit availability, or housing policies can simultaneously affect both inequality and

affordability. Finally, measurement errors in income data or housing price indices can further introduce bias. Therefore, OLS cannot accurately identify the causal effect of income inequality on housing affordability, making an instrumental variable approach necessary.[1]

2.3.2 Instrumental Variables Approach

To address endogeneity, we employ an **Instrumental Variables (IV)** approach using a Two-Stage Least Squares (2SLS) estimation. We instrument income inequality using two exogenous variables: **Marginal Tax Rate** and **R&D Expenditures**.

The marginal tax rate is a strong determinant of post-tax income distribution, as it directly affects income redistribution and wage disparities. A progressive tax system, where higher earners are taxed at a higher rate, reduces inequality by compressing the income distribution and transferring resources to lower-income groups. Conversely, a less progressive tax system or tax cuts for high earners lead to a higher concentration of income at the top, increasing inequality. Empirical evidence from OECD countries confirms that changes in marginal tax rates have significant effects on income inequality, making this a strong and relevant instrument. In our main specification, we use the marginal tax rate at 100% of the average wage (AW/APW) as our instrument. This choice ensures a standardized and comparable measure across countries, capturing the tax burden on the average worker. It reflects the fiscal pressure on the middle class, which plays a crucial role in overall income distribution and economic stability. The 100% AW/APW level is widely used in fiscal studies, as it represents the benchmark for assessing income taxation's redistributive effects. The exclusion restriction holds because taxation affects disposable income, but its impact on housing affordability is indirect, operating through its effect on income distribution. While taxation influences individuals' purchasing power, its role in housing demand, mortgage availability, and price formation is secondary compared to structural factors such as supply constraints, monetary policy, and speculation. The diversity of housing affordability trends across countries with similar tax policies suggests that taxation alone does not directly determine housing prices, reinforcing its suitability as an instrument.

R&D expenditures influence income inequality through skill-biased technological change. Increased R&D investment drives technological progress, disproportionately benefiting high-

[1] We estimated the OLS model with fixed effects. The results are reported in Table 9 in the appendix. Given the arguments presented, we will not interpret these results as they are biased.

skilled workers who possess the expertise to leverage new technologies, while low-skilled workers face stagnant wages or job displacement. This dynamic widens wage gaps and contributes to a rise in income inequality, as documented in studies linking R&D intensity to wage polarization. Since R&D expenditures are structural policies set at the national level, they serve as a plausibly exogenous driver of income inequality. The exclusion restriction is satisfied since R&D investment primarily affects labor markets and wage structures, not housing prices. Unlike monetary policy or direct housing subsidies, R&D expenditures do not immediately impact mortgage markets, credit supply, or land use regulations. While there is a potential concern that R&D-driven economic growth might increase housing demand in high-tech urban hubs, this effect is indirect and localized. To mitigate this risk, we control for urbanization rates and GDP per capita, ensuring that the instrument's effect on inequality is isolated from potential spillovers into housing markets.

Both instruments satisfy the relevance condition, as they have a well-established causal impact on income inequality. The exclusion restriction is upheld since neither tax progressivity nor R&D investment directly dictates housing affordability dynamics beyond their effect on income distribution. To validate these assumptions, we conduct first-stage F-tests to confirm instrument strength and Sargan-Hansen overidentification tests to ensure that the instruments are exogenous. This dual-instrument strategy allows for a robust IV-2SLS estimation, yielding credible causal insights into how income inequality influences housing affordability.

First-Stage Regression (Predicting Income Inequality):

$$Inequality_{it} = \alpha + \gamma_1 MR_{it} + \gamma_2 RD_{it} + \delta X_{it} + \nu_{it} \tag{2}$$

Second-Stage Regression (Estimating the Causal Effect):

$$Affordability_{it} = \delta + \theta \hat{Inequality}_{it} + \beta X_{it} + \eta_{it} \tag{3}$$

3 Results

3.1 The effect of income inequality on housing affordability

Table 3 presents the estimation results on the effect of income inequality on housing affordability. By leveraging an instrumental variable approach, the analysis mitigates endogeneity concerns, ensuring that the estimated effects reflect a causal impact rather than mere correlations. The first-stage results confirm the validity of the instrumental variables. The marginal tax rate at 100% of the average wage (MR_AW100) and R&D expenditures (Exp_RD) significantly predict income inequality, with strong F-statistics (all above 10), ensuring that the instruments are not weak. Additionally, the Hansen J-test p-values are above conventional thresholds, suggesting that the instruments satisfy the exclusion restriction and are exogenous.

In the second stage, income inequality (Gini coefficient, Top 1%, Top 5%, and Top 10% income shares) had a positive and statistically significant effect on housing affordability (defined as the ratio of house prices to income). Since higher values of affordability indicate worsening access to housing, the results suggest that rising inequality leads to higher housing costs relative to income, and deteriorating housing affordability. The findings underscore the significance of various inequality metrics, namely the Top 1%, Top 5%, and Top 10%, thereby highlighting the substantial contribution of wealth concentration among the highest earners to housing affordability challenges.

Examining the control variables, the findings indicate that trade openness exhibits a positive correlation with the housing price-to-income ratio, suggesting that increased trade exposure leads to a deterioration in affordability by accelerating housing demand and prices beyond the rate at which incomes grow. Conversely, urbanisation exerts a negative and significant influence, signifying that as urban areas expand, affordability is enhanced, potentially attributable to an increase in housing supply and employment prospects. Higher unemployment levels appear to ease affordability, presumably by weakening housing demand and decelerating price growth. The availability of credit, while facilitating homeownership, contributes to worsening affordability by fuelling demand and driving up prices. Similarly, higher tax rates are linked to a higher price-to-income ratio, potentially reflecting reduced disposable income and increased housing costs.

Table 3: Instrumental Variables (2SLS) Regression Results

	Dependent variable: Housing Affordability							
	First-Stage	IV-2SLS	First-Stage	IV-2SLS	First-Stage	IV-2SLS	First-Stage	IV-2SLS
	(1)	(1)	(3)	(3)	(4)	(4)	(5)	(5)
MR_AW100	−0.002***		−0.0004*		−0.002***		−0.002***	
	(0.0004)		(0.0002)		(0.0004)		(0.0004)	
Exp_RD	−0.020***		−0.012***		−0.021***		−0.021***	
	(0.005)		(0.003)		(0.004)		(0.005)	
gini		80.575**						
		(32.104)						
top1				154.249**				
				(67.625)				
top5						74.084**		
						(29.810)		
top10								70.469**
								(28.178)
trade	−0.001***	0.136***	−0.0003***	0.112**	−0.0004***	0.107**	−0.0005***	0.116***
	(0.0001)	(0.050)	(0.0001)	(0.046)	(0.0001)	(0.042)	(0.0001)	(0.044)
growth	0.003**	−0.140	0.002**	−0.205	0.003**	−0.114	0.003**	−0.111
	(0.001)	(0.361)	(0.001)	(0.386)	(0.001)	(0.362)	(0.001)	(0.361)
Urban_pop	0.004***	−1.060***	0.002***	−0.899***	0.004***	−0.979***	0.005***	−1.026***
	(0.001)	(0.204)	(0.0004)	(0.177)	(0.001)	(0.186)	(0.001)	(0.196)
credit		0.114***		0.088***		0.108***		0.114***
		(0.030)		(0.027)		(0.029)		(0.030)
unemp	0.014***	−1.515***	0.006***	−1.418**	0.011***	−1.240**	0.013***	−1.299**
	(0.001)	(0.573)	(0.001)	(0.585)	(0.001)	(0.501)	(0.001)	(0.515)
tax	−0.004***	0.324	−0.002***	0.151	−0.003***	0.186	−0.003***	0.224
	(0.001)	(0.228)	(0.0004)	(0.195)	(0.001)	(0.194)	(0.001)	(0.203)
F-Test	38.03	67.869	21.06	33.348	52.03	57.838	49.61	62.043
Hansen J-Test		0.744		0.407		0.732		0.827
Observations	684	684	684	684	684	684	684	684
R^2	0.682	0.147	0.513	0.069	0.647	0.131	0.662	0.133
Adjusted R^2	0.672	0.119	0.498	0.039	0.635	0.103	0.652	0.105

Notes: This table presents the results of the instrumental variable (IV-2SLS) estimation examining the impact of income inequality on housing affordability in OECD countries. The dependent variable is housing affordability, measured as the ratio of housing prices to income. Income inequality is captured using different measures, including the Gini coefficient, the income share of the top 1%, top 5%, and top 10%. To address endogeneity, the marginal tax rate (AW100) and R&D expenditures are used as instruments. All regressions include the constant not reported in the table. Controls include trade openness, GDP growth, urbanization, credit availability, unemployment rate, taxation. Robust standard errors clustered at the country level are reported in parentheses. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

3.2 Mechanism

This section undertakes a discussion of the principal mechanisms through which income inequality exerts its effect on housing affordability. In point of fact, income inequality has the capacity to exert influence on housing markets in a number of ways, which in turn has an effect on access to affordable housing for people of different incomes.

Housing Prices as a Transmission Channel

One of the primary ways in which income inequality affects housing affordability is through the concentration of wealth among high-income households. Research suggests that in competitive housing markets, higher income inequality leads to a greater proportion of homes being owned by wealthier individuals, which in turn drives up housing prices (Zhang et al., 2016). The presence of high-net-worth individuals in the housing market exerts a significant influence on the demand for high-value real estate, thereby contributing to an increase in equilibrium prices and a reduction in the accessibility of homeownership for individuals with lower incomes (Goda et al., 2019; Dewilde and Lancee, 2013). Consequently, rising housing costs have the potential to impede the financial stability of low-income renters, leading to an escalation in housing stress and displacement risks (Dustmann and Zimmermann, 2021). In order to test this mechanism, an interaction term between income inequality (Gini) and housing prices (real_h_prices) was introduced in our model. This approach was utilised to ascertain whether rising home prices amplify the impact of income inequality on housing affordability. The results obtained (in Table 4) from this analysis indicate a strong and significant effect (Coefficient = 0.965, $p < 0.01$), suggesting that as income inequality increases, housing prices become a major constraint on affordability. This finding supports the notion that wealthier households drive up demand for real estate, inflating property values and making homeownership increasingly unattainable for lower-income groups. Consequently, rising housing prices not only exacerbate socio-economic disparities but also compel low-income renters to reside in precarious housing conditions. These findings underscore the pressing need for policies that mitigate speculative pressures, augment the supply of affordable housing, and regulate real estate markets to ensure more equitable access to homeownership.

Access to Credit as a Transmission Channel

Credit access has been also identified as a factor influencing housing affordability, particularly in contexts of rising income inequality and escalating real estate prices (Goda et al., 2019). The prevailing credit conditions, encompassing interest rates, down payment requirements, and lending criteria, play a pivotal role in determining households' capacity to acquire affordable housing. While favourable credit conditions can promote homeownership, they have the potential to stimulate economic growth through the accumulation of substantial debt, thereby giving rise to unsustainable housing markets.

To test this mechanism, we examine the interaction between income inequality (gini) and access to credit (credit) on housing affordability. This allows us to assess whether easier credit access amplifies or mitigates the affordability gap driven by income disparities. Results (in Table 4) confirm a significant and positive effect (Coefficient = 0.159, $p < 0.01$), indicating that income inequality amplifies the role of credit in shaping affordability. While credit expansion can help lower-income households enter the housing market, it can also inflate demand and drive up home prices, ultimately making affordability worse over time. This suggests that credit availability plays a dual role: it initially improves access to homeownership but may lead to long-term affordability challenges by stimulating excessive housing demand.

Urbanization as a Transmission Channel

Numerous studies have identified urbanisation as an influencing housing markets, particularly in major cities where housing supply is constrained, speculation is rife, and prices are rising. This study hypothesises that income inequality exerts a more pronounced effect in urban areas due to housing shortages and intensified demand pressures.

To investigate whether urban housing market pressures amplify the impact of income inequality on affordability, we introduce an interaction between income inequality (gini) and urbanization levels (Urban_pop). This helps determine whether inequality-driven affordability constraints are more severe in densely populated urban areas. Results (inTable 4) show that the interaction is not statistically significant (Coefficient IV = -0.164, $p > 0.1$), suggesting that urbanization does not significantly mediate the impact of inequality on affordability in the OECD context. A possible explanation is that urbanization levels in these economies are already high, meaning that housing affordability issues may be driven more by macroeconomic factors (e.g., credit expansion, inflation) rather than spatial constraints.

This result suggests that while urbanization remains a key driver of housing prices, its role in exacerbating the inequality-affordability link may be less pronounced in already developed housing markets.

Inflation as a Transmission Channel

Inflation serves as a key transmission channel through which income inequality exacerbates housing affordability challenges, acting as a mediator that amplifies the effects of inequality on access to housing. This mediation occurs because inflation does not affect all income groups equally—while wealthier households, who are more likely to own property, benefit from rising real estate values, lower-income households, predominantly renters, face a disproportionate increase in housing costs (Jordà et al., 2016). As inflation drives up property prices, homeownership becomes increasingly inaccessible for lower-income groups, reinforcing existing inequalities. Furthermore, monetary policies aimed at stimulating the economy through low interest rates often benefit high-income households, as they can more easily access credit to invest in real estate, further fueling housing demand and speculative price increases. This, in turn, makes housing even less affordable for those who do not already own property, deepening the affordability crisis. In this way, inflation mediates the relationship between income inequality and housing affordability by creating a feedback loop where the wealthy accumulate more housing wealth, while lower-income households struggle with rising costs, declining purchasing power, and greater financial precarity.

To test whether inflation magnifies the impact of income inequality on housing affordability, we introduce an interaction between income inequality (gini) and inflation levels (price). This allows us to assess whether affordability constraints worsen in high-inflation environments. Results indicate a strong and significant effect (Coefficient = 2.868, $p < 0.01$), confirming that inflation exacerbates the affordability gap for lower-income households. These findings highlight the critical need for monetary and fiscal policies that incorporate housing affordability concerns, such as macroprudential regulations, rental market protections, and inflation-indexed housing assistance programs.

Table 4: Testing the Mechanisms

	Dependent variable:							
	wealth Chanel:Housing Prices		Credit channel		Urbanisation Chanel		Inflation Chanel	
	First-Stage	IV-2SLS	First-Stage	IV-2SLS	First-Stage	IV-2SLS	First-Stage	IV-2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MR_AW100	0.020***		0.473***		1.911***		0.004***	
	(0.0016)		(0.134)		(0.373)		(0.0003)	
Exp_RD	1.913		−2.828***		−0.684***		0.011***	
	(0.180)		(0.1857)		(0.041)		(0.0024)	
gini_housingp		0.965***						
		(0.059)						
gini_credit				0.159***				
				(0.051)				
gini_urban						−0.164		
						(0.156)		
gini_inflation								2.868***
								(0.947)
Controls	yes	yes	yes	yes	yes	yes	yes	yes
F-Test	116.39	116.391	280.26	280.264	89.44	86.791	494.32	494.322
Hansen J-Test		0.12		0.15		0.101		0.23
Observations	654	654	654	654	654	654	654	654
R^2	0.851	0.511	0.926	0.168	0.779	0.081	0.960	0.179
Adjusted R^2	0.844	0.496	0.923	0.145	0.770	0.055	0.959	0.153

Note: This table explores the channels through which income inequality affects housing affordability. Four key mechanisms are tested: housing prices, credit constraints, urbanization, and inflation. The dependent variable remains the housing price-to-income ratio. Interaction terms between inequality measures and each mechanism are included to assess their amplifying effects. Controls include trade openness, GDP growth, urbanization, credit availability, unemployment rate, taxation, housing price, inflation. All regressions include the constant not reported in the table. Robust standard errors are clustered by country. *** p < 0.01, ** p < 0.05, * p < 0.1.

3.3 Sensitivity test

This section is concerned with the assessment of the robustness of the findings obtained. For this purpose, alternative specifications are considered, and the consistency of the results is tested using a different instrumental variable, alternative measures of income inequality, and a restricted sample.

Alternative mesure of instrument: the marginal tax rate at 167% of the average wage (AW/APW)

First, as a robustness check, we re-estimate our model using the marginal tax rate at 167% of the average wage (AW/APW) in order to ascertain the stability of our results and determine whether they are driven by the measure adopted. The 167% AW/APW level represents higher-income earners, allowing us to test whether taxation effects on inequality—and subsequently on housing affordability—differ for upper-middle-class and affluent households. The results (in Table 5 indicate that the use of this alternative instrument leads to similar conclusions, which serves to reinforce the robustness of our results.

Alternative measures of income inequality: Palma and Bottom40

Second, we further test the sensitivity of our findings by replacing the income inequality mesures with two additional alternative measures. Namely, the Palma Ratio, which captures the income share of the top 10% relative to the bottom 40%, emphasising disparities at the extremes of the income distribution, and the Bottom 40% Income Share, which focuses on the income concentration among lower-income households. The results (in Table 5) remain broadly consistent across these different specifications, with inequality exhibiting a strong association with worsening housing affordability. The Palma ratio suggests that disparities between high- and low-income earners exacerbate housing unaffordability. Similarly, the bottom 40% income share is negatively associated with affordability, indicating that when lower-income households receive a smaller share of total income, housing costs become even more burdensome.

Table 5: Robustness Tests: Alternative measures

	Dependent variable: Housing Affordability					
	Alternative mesure the marginal tax rate		Alternative mesure of income inequality: Palma and bottom40			
	First-Stage	IV-2SLS	First-Stage	IV-2SLS	First-Stage	IV-2SLS
	(1)	(1)	(2)	(2)	(3)	(3)
MR_AW167	-0.003^{***}					
	(0.0004)					
MR_AW100			-0.126^{***}		0.001^{***}	
			(0.016)		(0.0002)	
Exp_RD	-0.008		-1.447^{***}		0.007^{***}	
	(0.005)		(0.171)		(0.002)	
gini		88.971^{***}				
		(27.367)				
palma				1.291^{***}		
				(0.408)		
bottom40						-281.637^{***}
						(85.810)
trade	-0.001^{***}	0.145^{***}	-0.005	0.088^{**}	0.0003^{***}	0.169^{***}
	(0.0001)	(0.046)	(0.005)	(0.036)	(0.00005)	(0.051)
growth	0.003^{**}	-0.161	-0.035	0.131	-0.001^{**}	-0.171
	(0.001)	(0.361)	(0.053)	(0.350)	(0.001)	(0.355)
Urban_pop	0.004^{***}	-1.095^{***}	0.261^{***}	-1.002^{***}	-0.002^{***}	-1.136^{***}
	(0.001)	(0.192)	(0.027)	(0.176)	(0.0003)	(0.197)
credit		0.119^{***}		0.110^{***}		0.121^{***}
		(0.029)		(0.027)		(0.029)
unemp	0.015^{***}	-1.627^{***}	0.543^{***}	-1.165^{***}	-0.005^{***}	-1.885^{***}
	(0.001)	(0.530)	(0.052)	(0.443)	(0.001)	(0.580)
tax	-0.002^{**}	0.368^{*}	-0.145^{***}	0.178	0.002^{***}	0.548^{**}
	(0.001)	(0.212)	(0.029)	(0.178)	(0.0003)	(0.249)
F-Test	56.34	78.939	136.42	97.166	27.52	68.762
Hansen J-Test (p-value)		0.563		0.273		0.47
Observations	684	684	684	684	684	684
R^2	0.714	0.133	0.754	0.156	0.685	0.163
Adjusted R^2	0.705	0.105	0.747	0.128	0.675	0.136

Note: Robust standard errors are clustered by country. Significance: *** p<0.01, ** p<0.05, * p<0.1.

Europe Only: Exclusion of the others continents

Third, to ensure that our results are not driven by regional heterogeneity, we re-estimate our model while restricting the sample to European OECD countries. This restriction helps mitigate institutional differences in housing markets, financial regulations, and fiscal policies that could bias our estimates. The results remain consistent, confirming that the observed relationship between inequality and affordability is not dependent on the inclusion of non-European countries (Table 6).

Table 6: Sample change: Europe Only

	Dependent variable:	
	First-Stage	IV-2SLS
	(1)	(2)
marginal_rate_AW100	-0.002^{***}	
	(0.0004)	
Exp_RD	-0.019^{***}	
	(0.005)	
gini		309.035^{***}
		(95.847)
trade	-0.0002^{*}	0.234^{***}
	(0.0001)	(0.057)
growth	0.0004	−0.349
	(0.001)	(0.464)
Urban_pop	-0.003^{***}	0.637
	(0.001)	(0.512)
credit	0.0004^{***}	−0.056
	(0.0001)	(0.058)
unemp	0.003^{***}	−0.648
	(0.001)	(0.630)
tax	0.003^{***}	−0.179
	(0.001)	(0.315)
First-Stage F-Test	18.12	18.123
Hansen J-Test (p-value)		0.62
Observations	449	449
R^2	0.551	0.164
Adjusted R^2	0.520	0.114

Note: This table examines whether the exclusion of non-European OECD countries affects the results. The dependent variable remains the housing price-to-income ratio. All regressions include the constant not reported in the table. Robust standard errors are clustered by country. *p<0.1; **p<0.05; ***p<0.01

Economic Condition: High vs Low Growth

Finally, we explore whether the effect of income inequality on housing affordability varies depending on a country's economic growth rate. Countries experiencing **higher growth rates** may see **rising incomes mitigating affordability issues**, whereas **low-growth economies** may face **stagnant wages**, exacerbating the negative effects of inequality. We test this hypothesis by splitting the sample into **high and low GDP growth** based on the median growth rate. These findings indicate that income inequality worsens housing affordability in both high- and low-growth economies, but the effect is significantly stronger in low-growth environments. This suggests that in periods of weak economic expansion, the affordability crisis is exacerbated by stagnating incomes, making housing even less accessible for lower-income households (Table 7).

Table 7: High vs Low Growth

	Dependent variable:			
	First-Stage	High Growth IV-2SLS	First-Stage	Low Growth IV-2SLS
	(1)	(2)	(3)	(4)
MR_AW100	-0.002^{***}		-0.002^{***}	
	(0.001)		(0.001)	
Exp_RD	-0.016^{**}		-0.028^{***}	
	(0.006)		(0.007)	
gini		46.862^{***}		90.752^{***}
		(18.108)		(32.058)
trade	-0.001^{***}	0.060	-0.001^{***}	0.208^{***}
	(0.0002)	(0.073)	(0.0002)	(0.060)
Urban_pop	0.006^{***}	-1.054^{***}	0.003^{**}	-0.700^{***}
	(0.001)	(0.309)	(0.001)	(0.231)
credit	-0.0003^{**}	0.095^{**}	-0.0001	0.111^{***}
	(0.0001)	(0.044)	(0.0002)	(0.034)
unemp	0.011^{***}	-1.451^{*}	0.014^{***}	-1.359^{**}
	(0.002)	(0.830)	(0.002)	(0.672)
tax	-0.004^{***}	0.197	-0.003^{***}	0.229
	(0.001)	(0.342)	(0.001)	(0.241)
	(0.074)	(21.575)	(0.093)	(21.768)
F-Test	35.96	35.960	35.27	35.266
Hansen J-Test		0.514		0.454
Observations	272	272	291	291
R^2	0.673	0.193	0.740	0.266
Adjusted R^2	0.654	0.153	0.719	0.215

Notes: This table shows 2SLS results for the effect of income inequality on housing affordability, estimated separately for high-growth and low-growth. Sample are divided in high and low growth groups based on the median GDP growth rate. The dependent variable remains the housing price-to-income ratio. Robust standard errors are clustered by country. *** p < 0.01, ** p < 0.05, * p < 0.1.

4 Conclusion

In this study, the causal relationship between income inequality and housing affordability in OECD countries from 2000 to 2021 is examined. An instrumental variables approach is employed in order to address potential endogeneity issues, and it is established that rising income inequality significantly deteriorates housing affordability. The results indicate that higher inequality leads to an increase in housing prices relative to income, making homeownership and rental affordability increasingly difficult, particularly for lower-income households. This effect is more pronounced in low-growth economies, where stagnant wages fail to compensate for rising housing costs, further exacerbating disparities in housing accessibility.

Our inquiry further delves into the mechanisms through which income inequality exerts its impact on housing affordability. We ascertain that speculative investment in real estate, credit constraints, and inflation play a pivotal role in exacerbating income inequality-driven affordability crises. In environments characterised by high income inequality, wealthier individuals and institutional investors have been observed to exert a significant influence on rising property prices, thereby reducing housing availability for middle- and low-income groups. Moreover, access to credit is limited among lower-income households, which restricts their ability to enter the housing market and reinforces long-term disparities in homeownership rates. Inflationary pressures further compound affordability issues, as rising costs outpace wage growth, making housing less attainable over time.

To ensure the robustness of our findings, we conduct several sensitivity tests using alternative measures of inequality and different instrumental variables. The results remain consistent across specifications, confirming the validity of our approach. Furthermore, we restrict our sample to European countries and find that the effects persist, indicating that the relationship between inequality and affordability is not confined to specific economic or institutional contexts.

From a policy perspective, our findings suggest that tackling income inequality is crucial to improving housing affordability. Indeed, without addressing underlying disparities in income distribution, efforts to improve housing accessibility may remain insufficient. Progressive taxation and redistributive fiscal policies could help reduce income disparities and ease housing cost burdens on lower-income households. Additionally, strengthening finan-

cial regulations to curb speculative investment in real estate markets may prevent excessive price inflation, ensuring that housing remains accessible to a broader population. Expanding affordable housing supply through targeted policies and incentives for developers could further mitigate the negative effects of inequality on housing markets.

References

Azmi, N. and Bujang, I. (2021). The gap between housing affordability and affordable house: A challenge for policy makers. *Planning Malaysia*, 19(17):1016.

Bertrand, M. and Morse, A. (2016). Trickle-up consumption. *The Review of Economics and Statistics*, 98(5):863–879.

Dewilde, C. and Lancee, B. (2013). Income inequality and access to housing in europe. *European sociological review*, 29(6):1189–1200.

Dustmann, C. and Zimmermann, K. F. (2021). Housing markets and inequality in europe. *Economic Policy*, 36(105):139–178.

Fligstein, N. e. a. (2017). Keeping up with the joneses: How households fared in the era of high income inequality and the housing price bubble, 1999–2007. *Socius Sociological Research for a Dynamic World*, 3:1–12.

Glaeser, E. and Gyourko, J. (2018). The economic implications of housing supply. *Journal of economic perspectives*, 32(1):3–30.

Goda, T., Stewart, C., and García, A. T. (2019). Absolute income inequality and rising house prices. *Socio-Economic Review*.

Goda, T. e. a. (2016). Income inequality and wealth concentration in the recent crisis. *Development and Change*, 47(5):1047–1070.

Goldstein, J. and Hastings, S. (2019). Buying in: Positional competition, schools, income inequality, and housing consumption. *Sociological Science*, 6:1–24.

Hailemariam, A., Churchill, S. A., Smyth, R., and Baako, K. T. (2021). Income inequality and housing prices in the very long-run. *Southern Economic Journal*.

Hilber, C. A. L. and Vermeulen, W. (2016). The impact of supply constraints on house prices in england. *The Economic Journal*, 126(591):358–405.

Jordà, Ò., Schularick, M., and Taylor, A. M. (2016). The great mortgaging: housing finance, crises and business cycles. *Economic policy*, 31(85):107–152.

Kleshcheva, A. (2021). Determinants of housing affordability in the region. In *E3S Web of Conferences*, volume 274.

Kösem, F. (2019). Income inequality and housing prices: Evidence from the united states. *Regional Science and Urban Economics*, 76:103568.

Matlack, J. L. and Vigdor, J. L. (2008). Do rising tides lift all prices? income inequality and housing affordability. *Journal of Housing Economics*, 17(3):212–224.

Teng, J. and Moghaddasi Kelishomi, A. (2024). Income inequality and housing market segmentation: A search-and-matching approach. *Journal of Housing Economics*, 64:101987.

Tsounta, E. e. a. (2015). Causes and consequences of income inequality. *IMF Staff Discussion Note*.

Türk, A. and Gurden, A. (2022). No home for poor men: a comparative study of household debt and homeownership in denmark and turkey. *Journal of Housing and the Built Environment*, 37(1):1–20.

Van Nieuwerburgh, S. and Weill, P.-O. (2010). Why has house price dispersion increased? *The Review of Economic Studies*, 77(4):1567–1606.

Wetzstein, S. (2017). The global urban housing affordability crisis. *Urban Studies*, 54(14):3159–3177.

Zhang, H., Wang, L., and Li, Y. (2016). Income inequality and housing affordability in china: Evidence from a panel analysis. *China Economic Review*, 41:149–161.

A Appendix

Table 8: List of countries

Pays	**Pays**	**Pays**
Australia	Austria	Belgium
Canada	Chile	Colombia
Czech Republic	Denmark	Estonia
Finland	France	Germany
Greece	Hungary	Iceland
Ireland	Israel	Italy
Japan	Korea, Rep	Latvia
Lithuania	Luxembourg	Netherlands
New Zealand	Norway	Poland
Portugal	Slovak Republic	Slovenia
Spain	Sweden	Switzerland
United Kingdom	United States	

Table 9: Fixed Effects - Estimation of Housing Affordability

	Dependent variable:			
	affordability			
	(1)	(2)	(3)	(4)
gini	123.221***			
	(41.567)			
top1		36.233		
		(58.441)		
top5			16.396	
			(46.575)	
top10				22.073
				(45.492)
trade	−0.434***	−0.403***	−0.404***	−0.407***
	(0.119)	(0.120)	(0.120)	(0.120)
growth	0.345	0.311	0.318	0.322
	(0.344)	(0.348)	(0.348)	(0.348)
Urban_pop	1.509**	2.107***	2.087***	2.040***
	(0.699)	(0.677)	(0.698)	(0.712)
unemp	0.112	0.365	0.357	0.348
	(0.483)	(0.481)	(0.482)	(0.482)
tax	1.804**	2.246***	2.306***	2.277***
	(0.699)	(0.711)	(0.707)	(0.709)
Observations	684	684	684	684
684				
R^2	0.139	0.118	0.117	0.117
Adjusted R^2	0.072	0.050	0.049	0.049
F Statistic (df = 7; 349)	8.020***	6.660***	6.618***	6.636***
Note:				*p<0.1; **p<0.05; ***p<0.01