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# Housing policy and affordable housing

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**Abstract**
Lack of affordable housing is a growing and often primary policy concern in cities around the world. The main underlying cause for the 'affordability crisis', which has been mounting for decades, is a combination of strong and growing demand for housing in desirable areas in conjunction with tight long-run supply constraints, both physical and man-made regulatory ones. Key policies to tackle affordability issues include rent control, social or public housing, housing vouchers, low-income tax credits, inclusionary zoning, mortgage subsidies, or government equity loans. Existing evidence reveals that the effectiveness and the social welfare and distributional effects of these policies depend not only on policy design, but also on local market conditions, and general equilibrium adjustments. While many housing policies are ineffective, cost-inefficient, or have undesirable distributional effects, they tend to be politically popular. This is partly because targeted households poorly understand adverse indirect effects. Partly, it is because the true beneficiaries are often politically powerful existing property owners, who are not targeted but nevertheless benefit via house price and rent capitalization effects. Designing policies that tackle the root causes of the affordability crisis and help those in need, yet are palatable to a voter majority, is a major challenge for benevolent policy makers.

Keywords: Housing policy, affordable housing, supply constraints, land use controls, housing subsidies, public housing, social housing, rent control, inequality
JEL: H24; H53; R21; R31; R32; R52

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## 1 Introduction

Lack of 'affordable housing' is a growing policy concern around the world, particularly in so called superstar cities (such as London, Hong Kong, or San Francisco) and desirable tourist areas. It has fueled social unrest in various cities and has triggered a flurry of policies aimed at addressing the 'crisis of affordability'.

The term 'affordable housing' is defined here as housing that has periodic costs (rental costs or user costs for owner-occupiers) deemed 'affordable' relative to household income. In some countries like the UK, 'affordable housing' has a different meaning, referring specifically to *subsidized* housing provided to eligible households whose needs are not met by the market.

The most common, if imperfect, way to measure 'affordability' is by comparing house prices or rents to household incomes. One rough rule of thumb states that housing is generally deemed affordable when the price-to-annual gross household income ratio is below 3. Another rule of thumb suggests that rental costs (or housing expenditures for owner-occupiers) should not exceed 30% of gross household incomes.

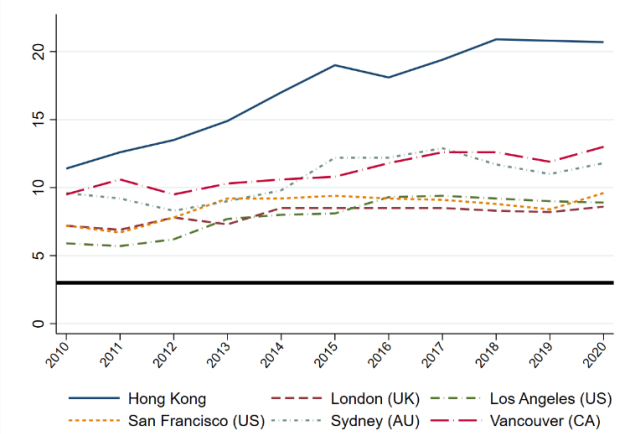
Using the basic price-to-income measure to proxy for 'housing affordability', statistics from numerous countries suggest a trend towards less and less affordable housing, in some cases over a period of several decades. This is especially true for superstar cities where housing has become 'seriously' unaffordable for a growing fraction of the population. It similarly applies to desirable tourist areas, where native residents are increasingly out-priced by second home buyers or out-rented by temporary holidaymakers who use rental sharing platforms.

Figure 1 shows median price-to-median income multiples for six supply-constrained and thriving 'superstar cities' (Panel A) and six cities that are either declining or have lax land use restrictions (Panel B) from 2010 to 2020. All superstar cities are well above the rule of thumb threshold for

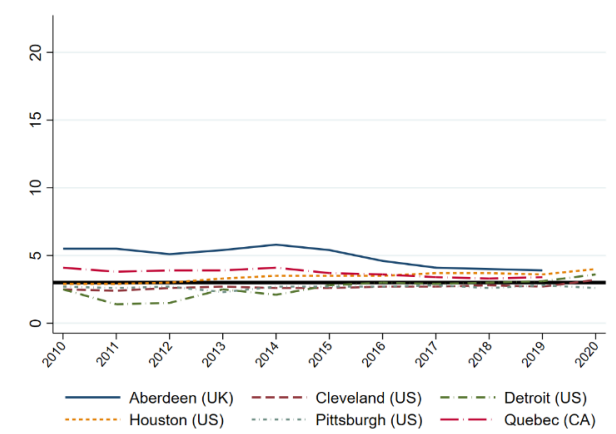
'affordable' housing, with Hong Kong[1] clearly standing out, and all have experienced a significant decline in affordability. In contrast, price-to-income ratios in cities with few supply constraints have remained stable around the affordability threshold. This is true for both declining cities, such as Detroit and for moderately growing ones such as Quebec. A comparison of Panels A and B also reveals that there can be enormous variation in affordability across space, even within the same country.

Figure 1
Price-to-income ratios for select cities around the world

Panel A: Supply-constrained superstar cities




Panel B: Cities with fewer supply constraints




*Note:* The data is derived from the Annual Demographia International Housing Affordability Surveys, 2011-2021. The raw data is from national sources. The bold black line represents the price-to-income 'affordability threshold' of 3.

One limitation of Figure 1 is that it is confined to only eleven years of data, covering less than a full real estate cycle. Panel A of Figure 2 overcomes this limitation by focusing on English regions and data from 1983 to 2021, illustrating strong cyclicality in housing affordability, especially in the extremely supply-constrained Greater London region.

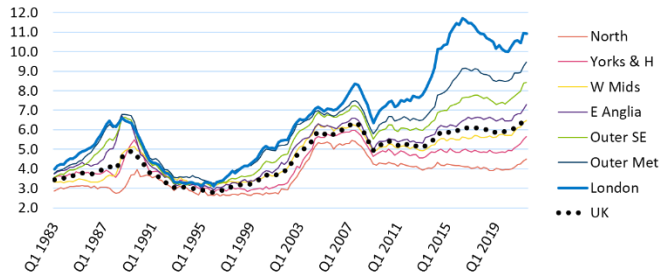
A further limitation of Figure 1 is that price-to-income ratios ignore financing costs and taxes associated with owner-occupied housing. Yet, as illustrated in Panel B of Figure 2 for London and the UK over the last two and a half decades, even when one considers the favorable credit conditions in the UK over this period, housing affordability has deteriorated. Another shortcoming of price-to-income ratios (based on mean or median house prices and incomes) is that they are unlikely

[1] Wu *et al.* (2012), amongst others, document serious housing affordability issues in urban China and especially in the country's superstar cities.

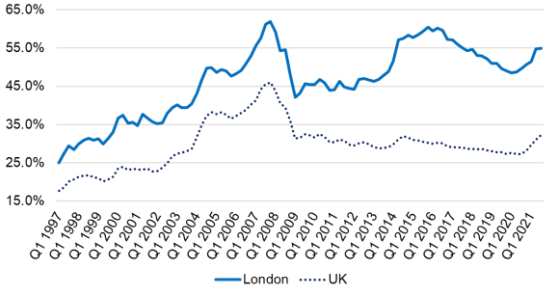
representative for the lowest incomes who often live in strongly subsidized social or public housing, or for moderate incomes who typically rent privately. This is illustrated in Panels C and D of Figure 2, again for London and the UK. Panel D further suggests that the affordability crisis is by no means confined only to the lowest incomes. Panels C and D jointly imply that at least in settings where low-income households are provided with subsidized housing, like in the UK, private renters with moderate incomes may be those struggling the most with their housing costs.

Figure 2
Housing affordability measures for London and the UK

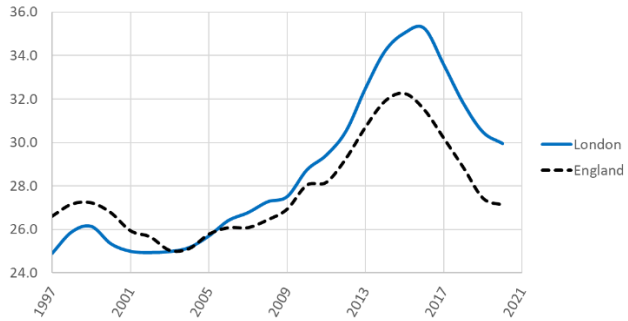
Panel A: House price-to-earnings ratio
(Selected UK regions, 1983q1-2021q3)



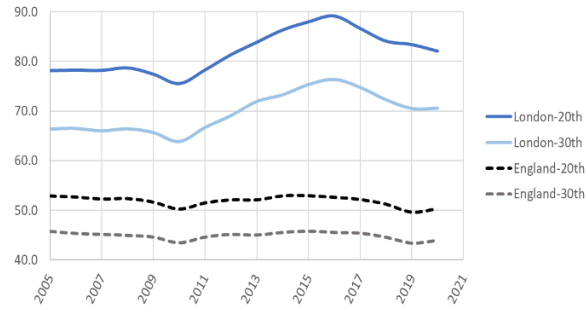

Panel B: First-time buyer mortgage payment as %
of take-home pay (1997q1-2021q1)




Panel C: Average weekly social rent as %
of 10th percentile weekly pay




Panel D: Average weekly private rent as %
of 20th/30th percentile weekly pay




*Notes:* Panel A: Sources: Nationwide, ONS, ASHE, and NES. Mean house price is derived from all properties. Mean gross earnings are from each region. Panel B: Sources: Nationwide, ONS, ASHE, and NES. Calculated using new lending interest rate for 80% loan of typical first-time buyer house price (25-year repayment mortgage). Panel C: Source for earnings: NOMIS and ASHE. 10th percentile earnings. Earnings correspond to relevant geographical unit. Source for social rents: Gov.uk Live Table 704 – PRP rents. Panel D: Source for earnings: NOMIS and ASHE. 20th/30th percentile earnings. Earnings correspond to relevant geographical unit. Source for private rents: £ amount for private rents from 2019 from VAO, experimental private rent index from the ONS.

Gabriel and Painter (2020) provide similar evidence of the renter housing cost burdens by household income quintiles in the US for an even longer time-period – between 1960 and 2014 (see their Chart 1), illustrating a fairly steady increase in the cost burdens for the bottom, second, and third quintile of the income distribution, with the burden by far highest for the bottom quintile.

What are the root causes of the mounting housing affordability crises around the world? This question is hotly debated amongst economists and finance scholars. Three strands of the literature can be distinguished. The first is a strand of the urban economics literature, which highlights the importance of local long-run supply constraints, especially land use restrictions, in conjunction with local long-run demand growth, as crucial determinants of high and growing house costs. The second strand emphasizes macroeconomic factors and financing conditions. It argues that a unique macroeconomic environment with a decline in the real rate of interest (influenced by central banks) or unprecedented availability of housing credit may explain a significant fraction of the increase in house prices over the last two decades. The third strand focuses on the role of unrealistic expectations about future house price growth.

Lack of affordable housing may, in the extreme, lead to *homelessness*. It may also lead to *inadequate consumption of rental housing*; households are forced to live in cramped and/or unsafe conditions. Finally, it may *prevent households from becoming homeowners*, the preferred form of housing tenure for most households. This is either because they are credit constrained (i.e., downpayment or liquidity constrained) (Linneman and Wachter, 1989; Fuster and Zafar, 2016), so cannot obtain a mortgage, or because they consider investing all their savings into one single asset too risky (Henderson and Ioannides, 1983; Turner, 2003; Hilber, 2005). Housing policies have attempted to address all three issues.

Implemented housing policies vary enormously within and across countries, and while some policies – such as rent control or the Mortgage Interest Deduction (MID) – are more common, many countries and cities have their unique policy variations that are driven by each country's institutional setting.

Evaluating the effectiveness of housing policies has been the subject of countless, mostly empirical, studies. This review focuses on the evaluation of two types of housing policies: policies that are widespread around the world (such as the MID) and policies that are more idiosyncratic in nature but have undergone the scrutiny of rigorous policy evaluations (such as the Low-Income Housing Tax Credit program, LIHTC, in the United States).

One insight of these evaluations is that many housing policies are not only costly but also ineffective. The underlying political economy of this, at first glance, surprising finding is discussed below.

## 2 Theoretical considerations

Several theoretical models guide intuition of the effects of housing policies aimed at improving affordability (e.g., Glaeser and Luttmer, 2003; Sommer and Sullivan, 2018; Diamond and McQuade, 2019; Davis *et al.,* 2021). In developing such models, some key features are more instrumental than others when trying to understand the general equilibrium effects, unintended consequences, and the distributional and welfare effects of housing policies.

*Space* is one important feature that must be considered. Many policies – be they place-based or tenant-based – aim to directly modify individuals' residential location choices. Even so-called 'blanket' or macro policies that target a whole country homogenously, may differ in their impacts across locations, for example because local housing supply price elasticities or access to labor markets differ. This, in turn, triggers a variety of spatial responses according to the economic incentives created by the policy.

Spatial general equilibrium models extend partial equilibrium frameworks, linking housing policies that influence housing demand or supply with other markets, such as labor and credit markets, and with public expenditures and the fiscal system more generally. This enables researchers to consider numerous indirect general equilibrium responses and their feedback effects on housing market outcomes, as well as distributional and social welfare consequences. One important – and often overlooked – general equilibrium mechanism is that demand-induced rising housing costs do not necessarily imply lower affordability. This is because rising incomes, easier access to credit, or cheaper credit have two opposing effects: A direct effect, making housing more affordable, and an indirect effect, via increasing demand for housing and therefore prices and rents, making housing less affordable.

Another important feature is *income heterogeneity across households*. This has important implications. Recent descriptive evidence (Basten *et al.,* 2017; Couture *et al.* 2019; Tsivanidis, 2019)

suggests that households' preferences are non-homothetic, with lower income households spending a higher share of their incomes on housing compared to higher income households. This implies that housing policies that target the poorest fraction of the population might have large effects on their economic responses. A further implication is that downpayment- and liquidity-constraints affect households differently depending on their incomes.

A final and crucial dimension is the *type of economic agents modelled*. To be able to assess the distributional and social welfare effects of given housing policies, one ought to distinguish between: *renters, homeowners, and (absentee) landlords*. Importantly, households might choose to which of the three types to belong to, responding endogenously to policy-induced incentives.

## 3 The Causes of the Affordability Crisis

Focusing only on the housing cost side, rather than on affordability, several strands of the literature have attempted to explain the strong increase in housing costs over extended time periods. The first strand has focused on the role of *long-run supply constraints (or the long-run housing supply price elasticity) in conjunction with local demand growth* in explaining the strongly growing house prices and – to a lesser extent – rents over the past few decades. A second strand has instead concentrated its attention on *changes in credit conditions* to explain the strong house price growth or decline over extended periods of time, that is, over the boom or bust of a housing cycle. A third strand, finally, has focused on the *role of expectations* and, in particular, irrational expectations. The three strands of the literature are briefly outlined below.

### *3.1 Increasingly binding supply constraints and strong demand in thriving cities*

Long-run housing supply constraints (i.e., man-made regulatory constraints, pre-existing physical structures, water bodies, non-developable landcover, and steep slopes) vary enormously across space and so does the corresponding long-run supply price elasticity (Saiz, 2010; Hilber and Vermeulen, 2016; Baum-Snow and Han, 2020; Büchler *et al.*, 2021).

Land use restrictions are in practice not determined by a benevolent planner but are the outcome of a political process and can be expected to become more restrictive over time. That is, as demand increases over time and locations become more 'filled up', owners of developed land, who want to protect their asset values by limiting supply, become more politically influential compared to owners of undeveloped land, who prefer lax land use restrictions (Hilber and Robert-Nicoud, 2013), leading – via voting and lobbying mechanisms – to tighter restrictions.

Moreover, even if regulatory restrictions and physical constraints themselves do not change, their *bindingness* depends on demand for housing space. To illustrate this point, consider a 10-story height restriction in the heart of Manhattan, New York, or in the desert. The restriction will be extremely binding in Manhattan, but completely irrelevant in the desert, as there is usually no demand to build tall buildings in the latter location. Similarly, water bodies are unlikely to constrain housing supply in Cleveland as much as they do in New York.

This has important implications not only for the effect of long-run demand growth on house prices, but also for its impact on housing affordability. Theory suggests that the same positive income shock capitalizes more strongly into prices in places with more inelastic long-run supply of housing. Consistent with this, it can be observed that not only did real housing costs increase substantially (in a cyclical fashion) in supply-constrained and thriving superstar cities over the last few decades, but correspondingly, housing affordability has deteriorated (see Figure 2 for London).

How important the various long-run supply constraints are for the substantial increase in housing costs over the last two or three decades is an empirical question. Numerous rigorous empirical studies, mainly focusing on the United States, point to the important role of tight land use restrictions, finding a strong causal effect of land use regulation on house prices (e.g., Glaeser and Gyourko 2003, Glaeser *et al.* 2005a and 2005b, Quigley and Raphael 2005, Glaeser *et al.* 2008, or Saks 2008), especially in desirable and supply-constrained larger cities, so called 'superstar cities' (Gyourko *et al.* 2013). Molloy (2020) provides a review of the effect of land use regulation on housing affordability and Gyourko and Molloy (2015) provide a review of the related impact of regulation on housing supply.

Cheshire and Hilber (2008) point to important interaction effects between the planning and the tax system, suggesting that local planning restrictiveness is facilitated by a lack of tax-induced incentives to permit development. Consistent with this, Ehrlich *et al.* (2018) document a link between local fiscal incentives and sprawl.

Hilber and Vermeulen (2016) investigate to what extent the real house price-earnings elasticity across English local authorities varies by different types of supply constraints. They find that tight land use restrictions in conjunction with positive earnings or labor demand shocks can explain a substantial fraction of the increase in house prices between 1974 and 2008. Their simulations suggest that if the South East (the most tightly regulated region in England) had the regulatory restrictiveness of the North East (the least regulated region, but still tightly regulated by international standards), house prices would have been 25 percent lower. The impact of physical constraints (due to the scarcity of developable land) is important but largely confined to highly urbanized areas like London. Uneven topography plays a quantitatively less meaningful role. Hilber and Mense (2022) and Büchler *et al.* (2021) document that these mechanisms do not only hold for prices, but also for rents: Housing rents increase more strongly in response to positive labor demand shocks in more supply constrained locations, although the amplifying impact of supply constraints is stronger for prices than for rents. This is consistent with prices, in contrast to rents, capitalizing not only the contemporaneous demand shock, but also future expected demand growth. The same argument applies for price-to-income ratios. The more inelastic long-run supply, the more prices can be expected to grow relative to incomes.

To what extent rising income inequality within cities may differentially affect housing affordability for different income groups is an interesting question. The answer depends, in part, on whether the housing markets for low and moderate incomes and the markets for higher incomes are segmented by tenure and/or quality. In a setting where housing markets are not segmented, price and rent increases should be similar across housing tenures and qualities. This implies that rising income inequality will reduce affordability mainly for low and moderate incomes (as prices and rents increase

strongly, but incomes increase the least for low and moderate incomes). However, to the extent that the lowest incomes benefit from subsidized housing, in contrast to moderate and middle incomes, the latter income groups may paradoxically be the one hit most strongly by ever rising equilibrium market rents and prices, consistent with Figure 2, Panels C and D.

### *3.2 Mortgage credit conditions*

Mortgage credit refers to loans used by households to purchase (or maintain) a property. Households qualifying for a mortgage loan must pay back the lending institution over time, usually with regular payments composed of principal and interest. Access to mortgage credit allows less wealthy households to put their feet on the owner-occupied property ladder, thereby allowing them to hedge against unforeseen rent increases (Sinai and Souleles, 2005) and progressively and 'automatically' accumulate wealth over time (Bernstein and Koudijs, 2020).

What is the effect of mortgage credit conditions on housing affordability? Two elements are considered here: mortgage interest rate dynamics and the (de)regulation of the credit market. The downward trend of mortgage rates observed over the last two decades – strongly influenced by central banks discount rate decisions – may explain a significant fraction of the aggregate house price increase in many rich countries. However, this countrywide downward trend is highly unlikely to explain the massive and growing housing affordability gap between superstar cities and places with lax land use restrictions and less strong demand growth illustrated in Figure 1. This gap is likely predominately driven by long-term growth differentials in the real economy across space in conjunction with differences in long-run supply constraints. Moreover, even the general upward trend in house prices at the *aggregate* level may in parts be driven by long-term demand growth at the macro-level in conjunction with the *overall* supply restrictiveness at country level.

Over the last few decades, the mortgage markets of several countries have undergone substantial deregulation – earlier in some countries like the UK and later in others like the US. By exploiting changes in credit supply caused by the deregulation of the US credit market having occurred before

the Great Financial Crisis, several papers provide evidence that credit supply amplifies house price cycles, driving up prices during booms and exacerbating downward trends during busts (Di Maggio and Kermani, 2017; Mian and Sufi, 2021).[2] This amplification effect is heterogeneous across locations. Favara and Imbs (2015) show that the price effect is larger in locations with more inelastic housing supply compared to locations with more flexible supply conditions.

In contrast to the above studies that focus on credit expansion periods, Carozzi (2020) explores what happens during the bust phase of a house price cycle. He shows that financial institutions tighten credit supply by adopting more stringent lending standards. This makes it more difficult for young first-time buyers having scarce financial resources to afford to become homeowners.

All the above has not only implications for housing costs, but also for housing affordability. In particular, an expansion of credit supply seems highly unlikely to explain the *persistent decrease* of overall housing affordability (which includes financing costs) observed over the last few decades in desirable locations. First, credit expansions should *improve* housing affordability, at least in markets with elastic long-run supply of housing, whereas in markets with inelastic supply, cheaper credit and higher house prices likely roughly balance each other out. Second, changing credit conditions may explain the *transitory* cyclicality in housing affordability rather than its persistent long-term deterioration.

### *3.3 Behavioral factors and other forces*

Behavioral responses of economic agents – both on the demand and supply side – can in theory explain extended periods with sharply rising house prices (e.g., the boom periods in Figure 2). Like with the expansion of credit supply, however, they are highly unlikely to explain deteriorating affordability over decades.

[2] An alternative strand of the literature explains house price booms and busts with changes in beliefs rather than with changes in credit conditions (Kaplan *et al.*, 2020). Greenwald and Guren (2021) suggest that the importance of credit supply and beliefs in shaping price dynamics depends on the degree of segmentation between the rental and owner-occupied housing market. Their findings imply a large effect of credit supply on house prices.

Periods with sharply rising house prices may be caused, on the demand side, by euphoric investors or, on the supply side, by myopic developers and lenders in conjunction with short-run planning and construction lags. The two mechanisms are discussed in turn below.

*The role of investors and irrational exuberance of euphoric investors*

Strong positive demand shocks in conjunction with planning and construction lags on the supply side, can cause strong initial price increases. Potential investors/buyers (i.e., agents on the demand side) observe these increases. If a plausible story tells them that the price responses persist, they may start to form unrealistic or excessive expectations of future price increases. Buyers become euphoric or 'irrationally exuberant' and increase their reservation prices beyond what is supported by the fundamentals. In such a setting, herding behavior of investors can form and further spur demand and push up prices, which seemingly confirms the beliefs of the early investors. This can ultimately lead to a 'bubble', which refers to a situation in which "excessive public expectations of future price increases cause prices to be *temporarily* elevated" (Case and Shiller 2003). Eventually, when prices deviate 'too much' from the price that is supported by fundamentals and 'the greater fool' doesn't turn up anymore (perhaps because she or he can no longer finance the purchase or there is a random negative market signal casting doubt), the 'bubble' bursts and prices collapse, to eventually return to fundamentally supported levels. One important implication is that 'irrational exuberance' may only explain a temporary sharp decline in affordability. It may not explain a decline over decades. Another caveat is that 'irrational exuberance' relies on housing purchases being mainly driven by investment rather than consumption motives.

While some wealthy investors may become irrationally exuberant, other wealthy individuals may affect housing markets even if they are not driven by euphoria but simply want to efficiently allocate their wealth. Over the last few decades, rising wealth accumulation among a growing cohort of individuals, has led to a dramatic increase of second homeowners (Hilber and Schöni, 2020). These buyers may only spend a few weeks per year in their secondary residences and their purchases may be driven as much or more by investment motives than by consumption ones. Such investments may

be speculative in nature, or dictated by a 'flight to safety', as pointed out by Badarinza and Ramadorai (2018).

A common finding in the literature is that – to the extent that these buyers bid in the same market as locals – they can significantly increase housing prices, making housing – especially owner-occupied housing – less affordable for local residents. Such price effects tend to be strongly localized in certain neighborhoods of superstar cities (e.g., Westminster and Chelsea in London) or tourist areas. They are however unlikely to markedly affect house prices at the metro area level (e.g., at the level of the Greater London metro area) (Hilber and Mense, 2021). Investors of second homes may influence house prices not only by their sheer numbers. Chinco and Mayer (2016) show that out-of-town buyers tend to overpay properties, as they are less informed than local buyers. Cvijanović and Spaenjers (2021) provide evidence that foreign buyers might pay higher prices, as they tend to bargain less intensively.

Housing affordability is also likely affected by the rise of sharing platforms such as AirBnB. Especially in superstar cities and touristic areas, this technological innovation enables existing investors/landlords to rent out their housing units more profitably as short-term rather than as year-round rental units. This reduces the supply of regular rental units and thereby adversely affects affordability. The rise of sharing platforms also made it more lucrative for wealthy individuals to buy housing units as second homes, allowing them to 'consume' them for a few weeks a year and rent them out for the rest. This creates additional demand for housing in central areas of superstar cities as well as in touristic areas, potentially further driving up house prices, making it more difficult for younger households with moderate incomes to get their feet on the owner-occupied housing ladder. Barron *et al.* (2021) document that the presence of listing services drives up house prices and rents in a causal sense, with the effects being larger for house prices. Koster *et al.* (2018) explore the effects on house prices of constraining short-term housing rental platforms in Los Angeles. They find a strong negative effect on the price of single-family homes but not on the price of apartments, hinting at substantial negative externalities associated with short-term rentals within apartment buildings.

*Myopic developers and lenders and development lags*

A temporary amplification of prices can also be triggered by myopic developers and lenders, that is, agents influencing the supply side of the housing market. Triggered again by a positive demand shock in conjunction with planning and construction lags, prices may increase initially. If developers and lenders are myopic, this may trigger them to form unrealistic expectations about future price growth. This might lead to overbuilding fueled by easy access to credit, especially in markets with elastic long-run supply. Eventually, the time-on-the market and housing vacancy rates start to increase and eventually prices drop, often below the initial levels, until eventually a new market equilibrium is achieved. Declining affordability caused by myopic supply-side agents in conjunction with lags is too a *temporary* phenomenon. It cannot explain a steady decline in affordability over decades.

# 4 Policy responses and evaluations

## *4.1 Policies focused on owner-occupied housing*

Most developed countries aim to make homeownership more affordable in one form or another. In most cases, these policies aim to facilitate access to credit or to lower its cost. The most common and popular policies are outlined below.

*Mortgage Interest Deduction (MID)*

The MID is perhaps the most popular policy to encourage homeownership, with many studies focusing on the impact of the MID in the US on various housing outcomes. In a seminal paper, Glaeser and Shapiro (2003) point out that the MID is targeted at the wealthy, who are almost always homeowners regardless of the subsidy, and that households at the margin between owning and renting often don't itemize the MID. Thus, the MID may not create new homeowners but rather increases the housing consumption of higher income households. Hanson (2012) provides empirical evidence consistent with this proposition; he finds no relationship between the MID and homeownership attainment but a significant positive effect of the MID on the size of purchased homes.

Hilber and Turner (2014) point out that in markets with inelastic supply of housing, the present value of the MID (or of any other homeownership subsidy for that matter) can be expected to be capitalized into house prices, thus offsetting the positive incentive effect of the subsidy on homeownership attainment. In fact, because a MID-induced increase in house prices also amplifies the necessary downpayment and future mortgage payments, it may reduce rather than increase homeownership in markets with inelastic supply of housing. Consistent with this proposition, Hilber and Turner, employing a panel fixed effects strategy, provide evidence that the MID only promotes homeownership attainment of moderate- and higher-income households in metro areas with lax land use regulation. In contrast, in markets with tight regulation, the MID discourages homeownership attainment of the two income groups, with the net effect on homeownership for the country being almost zero. They also show that the homeownership decision of lower income households, who do not itemize the MID, are not affected by the MID.

In a related paper, Sommer and Sullivan (2018) develop a dynamic quantitative model to simulate the effects of the MID on equilibrium house prices, homeownership, and welfare. Consistent with Hilber and Turner's empirical findings, their simulations suggest that *eliminating* the MID causes house prices to decline, increases homeownership, decreases mortgage debt, and improves welfare, challenging the widely held view that repealing the subsidy would depress homeownership. Blouri *et al.* (2021) complement this work by investigating the location and tenure responses of households following a repeal of MID subsidies in a spatial equilibrium framework. Consistent with the previous literature, they find that, on aggregate, a repeal of the MID reduces homeownership only by a small amount while increasing welfare.

Evidence for Europe points to similar conclusions. Exploiting a quasi-natural experiment in Denmark, Gruber *et al.* (2022) – similar to Hilber and Turner (2014) – find that the MID has a precisely estimated zero overall effect on homeownership for high- and middle-income households. Consistent, with Sommer and Sullivan (2018), they find that reducing the MID lowers equilibrium house prices. Consistent with Hanson (2012), they find a clear effect on housing demand at the intensive margin,

inducing homeowners to buy larger and more expensive houses. Moreover, the MID increases the indebtedness of households.

*Non-taxation of imputed rents and of capital gains for 'principally owner-occupied units'*

Some countries allow all owners – owner-occupiers as well as landlords – to deduct their mortgage interest from income taxes. In this case, failure of the tax code to treat owner-occupiers as landlords renting to themselves (i.e., the *non-taxation of imputed rental income*) as symmetry would require, is the real source of the subsidy, not the MID per se. Eliminating the asymmetry would require taxing imputed rents and preserving, not eliminating, the MID (Brueckner, 2014).

Most countries – with the notable exception of Switzerland, a country with a very low homeownership rate – do not tax 'imputed rental income' of owner-occupiers. In a similar vein, many countries *tax capital gains* from 'investment properties' but not from principally owner-occupied dwellings. Both these 'non-policies' generate a strong asymmetric tax treatment of owner-occupiers and landlords, favoring the former. Hilber (2014) provides evidence that the abolition of the 'taxation of imputed rental income' in Spain and Italy had a relatively modest positive effect on homeownership attainment, increasing it by around 2 percent.[3] Capital gains tax reforms in Germany and Greece were estimated to have similarly modest effects.

*Government equity loans*

Government equity loans is a policy, where the government provides a loan for up to a certain percent of the house value to buyers of properties. These can be either all buyers or only first-time buyers depending on the policy design. In addition, often buyers do not have to pay interest on the equity loan for a certain number of years. One such example is Britain's Help to Buy equity loan scheme that is tied to the purchase of newly built homes. Carozzi *et al.* (2021) take advantage of spatial discontinuities in the scheme (inside vs. outside the Greater London Authority and on the Welsh vs.

[3] This modest effect may be for two reasons. First, the imputed rent for tax purposes in Italy and Spain has been much lower than the true market rent. Second, the subsidy may be partially capitalized into higher house prices, thereby partly offsetting the incentive effect of the subsidy.

English side of the border) to explore its economic and distributional impacts. They find that the subsidy significantly increased house prices, while having no discernible effect on construction volumes in Greater London, where housing supply is severely constrained. In contrast, the subsidy had no effect on prices but increased construction near the English/Welsh border, were supply conditions are lax. They also find that the main beneficiaries of the policies are existing landowners and developers participating in the government's scheme.

*Other policies focusing on the availability and cost of mortgage debt*

Under *government equity participation* programs, the state provides part of the capital at advantageous credit conditions – including deferred mortgage payments and lower interest rates – to allow households to purchase their first home. In return, the state gets an equity share and benefits from the property capital appreciation proportional to their equity share. One example of such a policy is the UK's Help to Buy Shared Ownership scheme, although uptake has been limited. *Debt-relief programs* provide incentives to lenders to renegotiate mortgage terms with financially constrained borrowers. One example is the Home Affordable Modification Program (HAMP), launched in the United States in 2009, aiming to help struggling homeowners to avoid foreclosure. Agarwal *et al.* (2017) show that the HAMP program capitalizes into higher prices, similar to the MID. Finally, some governments regulate the mortgage sector to allow for so-called *alternative mortgage schemes*, such as interest-only and backloaded mortgages. These alternative schemes modify the mortgage reimbursement structure to decrease the periodic cost of mortgage loans. The principal is typically not fully paid back to lenders, who keep a permanent equity share until the property is sold. Garmaise (2020) notes that while existing research suggests that alternative mortgage contracts mostly help young and highly educated households to buy larger houses, the evidence of their impact on the housing decisions of lower-income and less educated households is mixed.

*Overall assessment of policies that aim to help finance leveraged ownership*

All the above policies share some common points that arguably reduce their effectiveness in improving housing affordability. First, by reducing the periodic cost of mortgage debt or by facilitating access to credit, the policies increase demand for owner-occupied housing. In markets with inelastic long-run supply of housing, the effect of this is to further increase house prices, offsetting any positive effects on affordability. Second, these policies tend to be 'blanket' policies that do not (or scarcely) differentiate between local housing markets and individual household characteristics. As a result, these policies tend to be ineffective in promoting homeownership for lower income groups and to improve social welfare. Finally, the policies tend to have undesirable distributional effects, benefiting mainly existing homeowners via higher property values in tightly supply constrained locations.

*House price cooling measures*

While most developed countries in the West have implemented credit related policies that facilitate access to credit, thereby increasing housing demand, some Asian countries including China and Singapore have gone in the opposite direction, imposing cooling measures in an attempt to stabilize house prices and improve affordability, especially in superstar cities. Deng *et al.* (2019) explore the effects of cooling measures in Singapore, including, among others, the introduction of a seller's stamp duty, an additional buyer's stamp duty, a required total debt servicing ratio, and a change in the required loan-to-value ratio. Their findings suggest that these measures have achieved their primary goal to reduce house prices, while at the same time not causing significant collateral damage to the broader economy.

One important caveat is that measures, which make access to credit more difficult or increase the cost of credit, neither help low-income renters nor households with moderate incomes at the margin of buying – prices fall, but only because credit conditions worsen.

Somerville *et al.* (2020) study the effects of a different cooling measure in mainland China: purchasing restrictions implemented by local Chinese governments. These restrictions limit the number of residential properties an individual can own, thus targeting, in part, second-home investors. The authors find that, while significantly decreasing the transaction volume, the purchasing restrictions do not seem to achieve the goal to contain price increases, likely due to developers anticipating that the restrictions were temporary rather than permanent.

One crucial caveat with all these cooling measures is the question whether they could be effectively implemented in Western democracies. One issue would appear to be political acceptance, especially in countries with homeownership majorities. Another issue might be that the political process takes too long, potentially triggering pro-cyclical rather than anti-cyclical price responses.

*Price discounts to social tenants to purchase their home*

Not all policies that aim to encourage homeownership attainment focus on the availability or the cost of mortgage debt. An internationally unique policy is the UK's 'Right to Buy' scheme, introduced in 1980, giving social housing tenants the legal right to buy their homes at a large discount with some restrictions on resale, significantly increasing the homeownership rate. Disney and Luo (2017) assess the impact of Right to Buy on social welfare. They find that the policy can improve aggregate welfare of low-income households only if the quality of the social housing units is sufficiently low such that middle-wealth households have no incentive to exercise the Right to Buy-option.

### *4.2 Policies focused on rental housing*

*Social and public housing*

Social or public housing – different countries use different labels – refers to rental housing that is either owned by the government or by non-profit organizations, or a combination of the two, and is provided to eligible households at significantly below market rent. To qualify for social or public housing, households must usually satisfy several criteria, intended to ensure that the housing units are allocated to those most in need.

The share of social or public housing relative to all housing has declined significantly in many countries over the last few decades. This may be partly because the provision and maintenance of social or public housing are costly and governments' public finances have been increasingly under pressure, partly it may be because of policy assessments discussed below that are critical of the benefits of providing such housing or other assessments that favor different policies such as housing vouchers (Olsen, 2003; Olsen and Zabel, 2015).

By providing housing at significantly below market rent, governments, de facto, improve housing affordability for qualifying households. The literature points, however, to two central shortcomings associated with social housing. First, as stressed by Waldinger (2021), there is a trade-off between efficiency and redistribution. Given that the price of social housing is set below the market price, demand for social housing tends to largely exceed its supply. Qualifying households are thus put on waiting lists, and it often takes years before they benefit from the policy, if at all. It also raises difficult normative questions about who should get first preference, with 'first come first served' being a common but highly inefficient rule. The second issue relates to the negative externalities arising from concentrating social housing in a few local areas. Weinhardt (2014) documents that children whose parents move to social housing in disadvantaged areas achieve lower educational attainments.

By exploiting the demolition of public housing and the provision of housing vouchers to relocate lower income households, researchers have been able to estimate the impact of eliminating social housing on individuals who were living in it and on nearby neighborhoods. The main findings are that children, especially young ones, benefit from moving to less disadvantaged areas in the long run. Chyn (2018) finds that children who relocate away from social housing are more likely to be employed when reaching adulthood, earn more in the early stages of their careers, display fewer arrests related to violent crimes, and tend to drop out less from high school. This contrasts with Jacob (2004), who finds no indirect effect of public housing following demolitions. Chyn (2018) argues that this is because Jacob only looks at short-term effects and his findings may thus not be a good guide for understanding longer-run impacts. Aliprantis and Hartley (2015) find that violent crimes decrease

in areas where social housing units have been demolished. Importantly, this reduction in crime more than compensates the increase in violent crime following the displacement of previous social housing beneficiaries into new neighborhoods.

Overall, the above literature seems to suggest that 'helping places' via building more social housing may be inferior to 'helping people' via housing vouchers. A more nuanced view of this statement is offered below when assessing housing vouchers.

*Rent control*

Two broad types of rent control can be distinguished. 'First generation' rent control refers to hard forms of rent control, in which no rent increases are permitted at all. The rent is effectively frozen at the rate that existed when the law was enacted. 'Second generation' rent control, in contrast, refers to a milder form of control, in which rent increases during a tenancy are limited (often indexed to an economic indicator, such as the consumer price index), however, the rent is typically allowed to rise to the market rent between tenancies (Arnott 1995).

Several exceptions and loopholes to rent ceilings are also usually put in place depending on the market segment and/or the type of housing units. Often, only the existing stock or certain central areas are affected by rent control.

The main goal of rent control is to make rental housing more affordable by capping future rent increases. Economists have documented several unintended consequences of the policy, especially of first generation rent control, that arise both from the supply and the demand side of the housing market.

On the supply side, because the value of rental properties is given by the present value of future rents, landlords of regulated properties lose out. This triggers them to curb construction of new rental housing in regulated market segments and, if possible, to instead supply new housing in unregulated segments, or, to find loopholes to avoid the regulation. Diamond *et al.* (2019) document that landlords of regulated properties respond by selling housing units for owner-occupation and by

converting/renovating buildings to escape the regulation. To preserve the profitability of their real estate assets, landlords of existing regulated units may reduce refurbishments and maintenance, especially in the case of first-generation rent control, leading to a deterioration of the regulated housing stock over time, which in turn may exert negative externalities on residents in neighboring housing units. Although this latter mechanism is not strongly supported by the literature (Moon and Stotsky, 1993), it seems in line with the findings of Autor *et al.* (2014). They find that decontrolling housing markets leads to a considerable price appreciation of nearby never-controlled housing units, implying that rent controlled units (or possibly their occupiers) exert negative externalities on occupiers in non-regulated units.

On the demand side, rent control provides an incentive to households to remain in the same housing unit for a longer period than they would if they had to pay the market rent. This is because the longer a renter remains in the property, the more she benefits from capped rent increases. Reduced household mobility creates two main unintended effects. First, workers who rent may be misallocated across space, potentially hampering productivity. Second, the heterogeneous housing stock may be mismatched with households' characteristics and their optimal consumption patterns, leading to allocation inefficiencies, as pointed out by Glaeser and Luttmer (2003).

Overall, rent control makes rental housing more affordable for some by redistributing rental income from landlords to lower-income households (Olsen, 1972), creating a trade-off between desirable distributional effects and welfare efficiency. In the long run, because the adverse effects of rent control (misallocation of housing units, productivity losses, deterioration of housing stock, and negative externalities) tend to increase over time, the welfare inefficiencies are likely to outweigh the distributional benefits. Moreover, as the population tends to increase over time, especially in attractive rent-controlled areas, the desired distributional effects are likely to decrease, as a progressively smaller share of low-income renters will benefit from inelastically supplied rent-controlled units.

*Inclusionary zoning (provision of 'affordable' housing)*

One way of providing subsidized housing to lower income households is through so called 'inclusionary zoning', which refers to local governments requiring a certain share of newly constructed housing to be made affordable by developers to households with low to moderate incomes, whereas the remaining units can be sold at market rates. This is in return for local jurisdictions permitting development of a certain kind in the first place.

Inclusionary zoning (the opposite of 'exclusionary zoning', which aims to exclude lower income households through the local zoning code) is popular amongst policymakers in urban locations and widespread across the developed world. It comes in various shapes and forms. While in the United States, for example, these policies typically involve placing deed restrictions on 10 to 30 percent of new units, to make the cost of those units affordable to lower incomes, in the United Kingdom, the share of 'affordable housing' units is negotiated between the developer and the local authority on a project-by-project basis.

In addition to providing 'affordable homes' to lower incomes, an alleged benefit of inclusionary zoning is that it mixes communities. Evidence on the benefits of mixing communities is discussed below in the subsection on housing vouchers.

To understand the cost side of inclusionary zoning, starting point is the realization that mandatory inclusionary housing is an implicit tax on market-rate housing. That is, while inclusionary zoning provides 'affordable homes' for those lucky enough to qualify, it adversely affects the affordability of non-subsidized housing via developers passing on the higher costs.

To the extent that inclusionary zoning is associated with costly and time-consuming negotiations between developers and local authorities – like in the case of 'Section 106 Agreements' in the UK – it injects additional risk into the development process, reducing the number of viable development projects and ultimately new supply. This in turn adversely affects the affordability of non-subsidized housing (Cheshire and Hilber 2021).

The main beneficiaries of the policy are thus arguably existing homeowners and landlords via higher prices and rents on existing housing. Moreover, given that large scale developers are better equipped to negotiate with local authorities and find legal ways around restrictions, inclusionary policies may create barriers to entry for smaller scale developers, further increasing the deadweight loss associated with inclusionary zoning policies.

What about the net effect of inclusionary zoning policies? In the United States, inclusionary housing programs are sometimes voluntary, requiring subsidies or valuable exceptions to zoning regulations to generate participation by developers. Soltas (2021) exploits such a setting in New York City to get at the questions whether inclusionary zoning is a cost-effective means of generating mixing-induced benefits and whether there might be more cost-effective policies. Building on a model of housing developer behavior, Soltas asks the question how costly it is to induce developers to provide inclusionary housing. While Soltas' findings suggest that developers do respond to fiscal incentives, he also finds that, on a city-wide average, the fiscal cost of the marginal inclusionary housing unit is around $1.6 million. This is about six times the city-wide per-unit cost of other housing assistance programs in New York City (i.e., Section 8 vouchers and Low-Income Housing Tax Credits (LIHTC). Overall, Soltas' findings strongly suggest that inclusionary zoning may not be a cost-efficient policy, although he also points to immense variation in the fiscal costs across neighborhoods, with the cost-efficiency being the worst in Manhattan and the best in the Bronx, Queens, and Staten Island.

All in all, inclusionary zoning, while politically popular, seems like an extremely cost-inefficient and possibly even counterproductive way to tackle the housing affordability problem, especially in desirable and tightly regulated cities.

### *4.3 Other relevant policies*

*Subsidies to housing developers*

Over the last few decades, governments of several countries, such as the US and France, have resorted to subsidizing private housing developers and investors whose development projects satisfy certain

eligibility criteria linked to affordability. The most investigated such policy is the Low-Income Housing Tax Credit (LIHTC) program in the US. This has triggered a significant body of empirical research.

The LIHTC program provides tax credits to housing developers who build or renovate housing units for rent i) in an area targeted by the policy, ii) below a given rent level, and iii) for households who do not exceed some income threshold over a long time. The tax credit is computed based on non-land construction costs and is usually spread over several tax periods – e.g., a decade – and is not refundable.

One of the main potential benefits of subsidizing developers via the LIHTC program is that it should increase the supply of less expensive lower-end housing units for households below the income threshold set by the policy. Moreover, when subsidies are allocated on a competitive basis, developers might go beyond prescribed requirements to increase the likelihood of being awarded the subsidy, lowering income and rent threshold levels and adding additional amenities to the development project, such as internet connection or playgrounds. Finally, from a social welfare point of view, subsidizing the construction of housing units may lead to positive externalities. The literature documents an overall reduction in violent crime (Freedman and Owens, 2011) and related, price increases of properties that neighbor subsidized developments in lower-income areas (Baum-Snow and Marion, 2009; Diamond- McQuade, 2019).[4] These effects are likely due to the gentrifying effect of subsidizing construction in poorer areas, which attracts moderate- or middle-income households that would not otherwise live in the neighborhood. The flip side of this gentrification process is, of course, that housing becomes less affordable for lower income households living in the neighboring areas. These households may move because they value the new amenities relatively less than the incoming households, or they may be forced to move because they can no longer pay the rent.

[4] Diamond and McQuade (2019) however also show that subsidized units in higher-income areas with a low share of minorities are associated with negative externalities.

The literature has documented further drawbacks of subsidizing private housing construction. To begin with, subsidies are poorly geographically targeted. Eriksen (2017) illustrates that subsidized construction is mostly uncorrelated with local measures of housing affordability or the housing supply elasticity.

At least two reasons lead to this inefficient spatial allocation of subsidies. First, the government must decide on which basis to attribute the scarce total subsidy amount to lower-tier administrative units, which in turn assign subsidies to selected development projects. To the extent that the initial allocation to lower tier units is based on criteria unrelated to housing affordability, such as total population, the program will be inefficient in its initial stage. Second, as pointed out by Lang (2012), policy design-induced incentives encourage profit-maximizing developers to submit subsidized construction projects in low rent areas, where affordability issues are comparatively less vital, and tenants of subsidized buildings may pay a rent close to that of unsubsidized ones. This is because the opportunity costs of renting out a subsidized property below the market rental rate in supply-inelastic and high-demand areas is much higher. Related, Burge (2011) estimates that less than 50% of the subsidy cost incurred by the government actually benefits tenants living in subsidized units in the form of lower rents, implying that developers may benefit as much as the eligible tenants.

Another issue is that the subsidized units often do not cater to low-income households but, rather, to moderate-income ones (Wallace, 1995). This is for several reasons. Income and rent ceilings of subsidized units are relatively high. Early (1998), in this context, finds a weak effect of subsidized housing in preventing homelessness. A major drawback of relatively high rent ceilings is that low-income households living in subsidized buildings are still likely in need of additional financial support to afford the housing costs (Williamson, 2011; O'Regan and Horn, 2013).

The fact that subsidized units, at least in the case of LIHTC, do not cater to low-income households, leads to crowd out effects. Moderate-income tenants might have decided to live in the neighborhood where the subsidized unit is located even in absence of the subsidy. Put differently, subsidized units directly compete with unsubsidized ones in attracting moderate-income households into the area. This

crowd-out effect has been shown to be large in magnitude, with estimates ranging between 30% and 100% (Malpezzi and Vandell, 2002; Sinai and Waldfogel, 2005; Eriksen and Rosenthal, 2010). Baum-Snow and Marion (2009) show that the crowd out effect is particularly acute in gentrifying areas, where moderate-income households are more likely to move, and less severe in stable or declining places.

A few suggestions have been formulated to alleviate the above issues in the context of LIHTC. Eriksen (2017) argues that a better spatial allocation of the tax credits could be achieved when the government attributes subsidies to lower-tier administrative units based on housing market fundamentals, such a construction and land costs, and affordability measures. In a similar vein, lower-tier administrative units may tailor rent and income ceilings to housing and labor market conditions at much finer scale than the one of urban areas. To contain costs, governments may implement a process where developers compete by bidding down the amount of the subsidy for a given development project (Lang, 2015).

*Place-based policies*

The distinguishing feature of place-based policies is that they target specific geographic areas rather than individuals. Place-based policies are wide ranging and encompass e.g., fiscal transfers, labor market programs, local infrastructure investments, or policies aimed at improving the housing stock in deprived areas, including project-based housing assistance or investments in existing public housing. This section focuses on the impact that all these policies have on (i) housing affordability for lower income households and, more generally, (ii) income- and wealth-inequality.

One feature that all place-based policies have in common – assuming they are at least somewhat effective – is that they increase local demand for housing, either directly via making the local housing stock more desirable, or, more commonly, indirectly, via improving local productivity, local infrastructure, local public services, or via reducing local taxes. This in turn, can be expected to increase house prices and rents, particularly so in markets with inelastic supply of housing, helping

better-off local homeowners and (typically absentee) landlords. In contrast, low-income households, who almost always rent, do not benefit as much, or do not benefit at all from local improvements, as these will be 'offset', at least in part and sometimes fully, by higher rents.

Empirical evidence of offsetting capitalization effects of place-based policies is ubiquitous. Starting with the seminal paper by Oates (1969), countless empirical studies provide evidence that policies that improve local public services, such as better school quality, or lower taxes, are capitalized into higher house prices.[5]

While most studies have focused on the capitalization of local public services and/or local taxes, a few studies have explored whether fiscal grants are capitalized as well. Hilber *et al.* (2011) show that central government grants to deprived local authorities in Britain, aimed at helping disadvantaged households, are essentially fully capitalized into higher housing costs, thus not helping lower income renters, that is, those they were designed to assist. Another implication of capitalization effects is that 'successful' place-based policies are likely to lead to gentrification. This is especially true if lower income households do not equally value the benefits generated by the place-based policy.

The above considerations strongly suggest that, at least from a 'housing affordability' or 'equity' point of view, place-based policies are problematic. Better policies should focus on 'helping people' directly rather than 'places', e.g., via vouchers.

One important caveat here is that the above proposition only holds if housing supply is at least somewhat unresponsive (so there are capitalization effects) and rents are not strictly controlled. Koster and van Ommeren (2019) provide an example of a place-based policy that does not suffer from undesirable distributional effects in a setting with rent control. They study a place-based policy in the Netherlands that improved the quality of public housing in impoverished neighborhoods. In

[5] See Chaudry-Shah (1988) and Ross and Yinger (1999) for early comprehensive reviews of the theoretical and empirical literature surrounding the 'capitalization hypothesis' and the related Tiebout-hypothesis. Tiebout (1956) proposed that consumer mobility (voting-with-the-feet) and interjurisdictional competition, at least under restrictive assumptions, can lead to an efficient provision of local public services. Oates (1969) thought to test the 'Tiebout-hypothesis' by exploring whether fiscal differentials across local jurisdictions are capitalized into house prices. See Hilber, 2017, for a more recent synthesis article on house price capitalization and its implications.

their setting, public housing is surrounded by owner-occupied housing stock (The Netherlands is somewhat unique in that most housing is either owner-occupied or public rental). They show that the policy was effective in improving the quality of the public housing stock and, via spillover effects, it increased the price of the surrounding owner-occupied stock. Critically, the policy did not increase rents, as rental units in the Netherlands are mostly public so rents are regulated. The consequence is that both public renters and owner-occupiers in the targeted location benefited from the policy, with the cost borne by the taxpayer.

A second important caveat is that if households are relatively immobile, then there may be little difference, in practice, between 'helping people' and 'helping places' as the former type of policy similarly increases local housing demand, offsetting the policy-induced benefits.

A last caveat is that it is assumed here that low-income households are credit constrained, preventing them from buying their home and benefiting from the policy-induced windfall gains arising to local property owners.

*Housing vouchers*

Housing vouchers are effectively a promise by the government to qualifying, typically low-income, households to pay a certain fraction of their private rent to the landlord. So far, substantive housing voucher programs appear to be confined to the United States. Households entitled to vouchers are usually responsible for finding a housing unit that best fits their needs in terms of housing type and location within the scope of the program. The household pays a fraction of its income in rent and the government pays to the landlord the remaining difference. The contribution of the government varies depending on several factors, but vouchers are usually capped by location-specific rent ceilings, with these ceilings typically being relatively low. If the rent exceeds this ceiling, then recipient households must top up the difference.

One advantage of vouchers is that, by reducing the rent burden of recipients, they improve housing affordability and might reduce the likelihood of becoming homeless, although solid empirical

evidence on the latter is currently missing. Most of the existing research suggests that housing voucher programs are comparatively more cost-effective than social housing ones (Olsen, 2003; Olsen and Zabel, 2015; Olsen, 2017). This is particularly true in housing markets where subsidized households can move into vacant units that would otherwise be unaffordable to them.

One key potential advantage of housing vouchers compared to place-based policies is that they tend to prevent 'ghettoization' in certain locations. In fact, more recent implementations of housing voucher schemes in the US aim to steer low-income households actively towards better opportunity neighborhoods. This is achieved via voucher designs that create greater incentives to move to lower poverty areas.

The literature highlights several benefits of doing so, especially for children of recipient households moving to lower-poverty areas at a young age. Evidence by Chetty *et al.* (2016) documents that children 'moving to opportunity' subsequently achieve higher college attendance rates, higher earnings, and lower single-parenthood rates. Youths are also less likely to commit crimes (Ludwig *et al.* 2001; Katz *et al.*, 2001; Kling *et al.*, 2005).

Evidence on the positive locational effects of housing vouchers is more mixed in the case of adults. On the one hand, adults do seem to experience improvements in their physical and/or mental health, and family safety ameliorates (Katz *et al*., 2001; Kling *et al*., 2007; Clampet-Lundquist and Massey, 2008; Ludwig *et al.*, 2013). On the other hand, the better neighborhood environments do not seem to improve their economic outcomes (Ludwig *et al.,* 2013**,** Chetty *et al.,* 2016). A strand of the literature even documents a negative relationship between receiving a voucher and labor market participation (Jacob and Ludwig, 2012). The negative impact of vouchers on labor supply might be because households must contribute by paying a fixed share of their income for housing. As such, to benefit from housing subsidies, households pay a 'voucher tax' on any increase in income, raising the marginal tax rate and thereby decreasing the benefits from working.

Policy makers aiming to improve affordability via housing vouchers face several challenges. As with social/public housing, demand for vouchers usually far outstrips supply, creating long waiting lists. Ellen (2020) suggests in this context that attributing vouchers on a first-come first-served basis is unlikely to optimize welfare, as the households that waited longer are not necessarily the ones that are most in need or that benefit the most. The latter is particularly true for families with young children, for which the locational benefits of vouchers seem to be particularly high.

Another challenge is given by low take up rates. Many households who receive vouchers do not (or cannot) use them. Equally, landlords – who are not forced to participate in voucher-schemes – may be reluctant to rent to voucher recipients, as they perceive them as riskier. Philips (2017) documents that landlords are half as likely to accept tenants who wish to pay by voucher with the acceptance rate declining with the rent amount, suggesting that qualifying households are unlikely to be able to move to lower-poverty areas. An alternative explanation for observed low take-up rates is that households are not able to find an affordable accommodation within the geographic scope targeted by the vouchers. This issue is caused by the topping-up mechanism of the US voucher scheme, which discourages qualifying households to rent in more expensive places. Galiani *et al.* (2015) find that increasing the stringency of location restrictions that aim to steer voucher recipients to lower poverty areas, via reducing the take-up rate of such vouchers, may perversely expose households to higher poverty rates.

Voucher payments may also not fully benefit recipient households. Susin (2002) and Collinson and Ganong (2018) find that increasing the number or, respectively, the value of housing vouchers in a metro area leads to higher rents, both for subsidized and unsubsidized households. One implication of this finding is that in places with inelastic supply, landlords – irrespective of whether they participate in the voucher scheme or not – may benefit as much or more from the policy than the voucher recipients. Recent work by Davis *et al.* (2021) suggests that targeting vouchers to areas offering economic advantages might drive up rents, especially so in supply inelastic places. Some households not receiving housing vouchers are then forced to leave the areas targeted by the voucher

program, moving to areas providing similar utility but having lower rents. Somewhat reassuringly, the authors find that while children of households moving to higher-opportunity areas experience large income gains in adulthood, children of families who leave these areas experience only small losses, suggesting that in equilibrium relocation benefits outweigh losses. In contrast to these studies, Eriksen and Ross (2015) do not find that an increase in the number of vouchers affected the overall price of rental housing. Their finding is consistent with voucher recipients renting higher-quality units raising demand and rents for such units but decreasing demand and rents for lower quality-units, which they would have occupied without the voucher.

A mix of the above challenges, and the facts that low-income households are likely to have social ties in less advantageous areas and perhaps also a preference for the amenities provided in these areas, may prevent voucher recipients to use the voucher and/or to move to economically more attractive locations. A few solutions have been suggested in the literature to address the above challenges. One such solution is to relax the voucher location restrictions while decreasing market frictions (Galiani *et al.*, 2015; Bergman *et al.*, 2020). Lower market frictions can be achieved by providing mobility advice, customized search, and financial assistance to voucher recipients and by trying to promote the engagement of landlords. Collinson and Ganong (2018) suggest indexing the rent ceiling to smaller spatial areas, with higher ceilings in higher quality locations, and lower ones in less attractive locations. They suggest that such a voucher reform can be budget neutral and may greatly improve the sorting of voucher recipients into better neighborhoods.

## 5 Housing affordability and homelessness

The existing literature on homelessness can be categorized into two broad categories: *individual-level studies* that primarily investigate homelessness from a social and health perspective and *aggregate-level studies* that include most of the analyses investigating the relationship between economic fundamentals and homelessness across cities and urban areas (O'Flaherty, 2019). These two strands of the literature reveal conflicting insights. The former literature tends to point to personal characteristics, such as mental illness and previous convictions, as main determinants of

homelessness, with only a marginal role played by housing markets and lack of affordable housing. The opposite is the case for the second strand of the literature. O'Flaherty (2004) argues that homelessness is likely a combination of individuals (i) having to live in tight housing markets with unaffordable housing and (ii) belonging to a vulnerable class of society.

The existing literature documenting the link between economic indicators and homelessness is scarce and faces several challenges. A first challenge is methodological and relates to implementing precise measures of homelessness, be it of sheltered individuals/families, or unsheltered ones. A second challenge is the question of how to identify the causal impact of specific market forces or policies on homelessness.

Nevertheless, existing research seems to agree that tighter housing markets characterized by higher rents and lower vacancy rates are associated with higher levels of homelessness (Quigley *et al.*, 2001). Additionally, O'Flaherty (1995) employs a partial equilibrium framework to show that under some conditions, stronger income inequality translates into higher rates of homelessness.

One specific type of policy that aims to help the homeless is similar to social/ public housing: The government provides short- to medium-term shelter or more permanent accommodation to individuals in extreme need. Another policy is housing vouchers discussed above. A recurrent finding in the literature is that placing homeless individuals into a permanent accommodation decreases homelessness significantly less than on a one-for-one basis (Early, 2004; O'Flaherty and Wu 2006; Corinth, 2017).

Several explanations have been provided. First, some targeted individuals would not have remained homeless in the absence of the policy. Second, homeless individuals are reluctant to leave the accommodation provided by the government. This slows down the rate at which people reinsert themselves into the private housing market compared to their reinsertion rate without the policy. Third, qualifying criteria of existing programs tend to create an incentive to remain homeless for longer. This is because longer homelessness spells increase the likelihood to qualify for government

provided shelter. Finally, to the extent that programs aiming to help the homeless positively shift the housing demand and capitalize into higher housing costs, those individuals at the margin of homelessness who do not qualify for the program, and who would have not become homeless in absence of the program, will be outpriced and become homeless.

## 6 Political economy considerations

The previous sections provide a gloomy picture of the effectiveness and cost-efficiency of policies aimed at improving housing affordability. However, why do individuals vote for and continue to support policies that have detrimental social welfare effects and, on occasion, even worsen affordability?

Less educated voters might simply have limited knowledge of the current state of the housing market and of the direct effects of a given policy. Slemrod (2006), for example, documents how a misconception of the workings of the tax system affects the support of taxpayers for meaningful reforms. Such misconceptions seem likely to also occur in the case of housing policies as many of them, if not all, have complex implementations, including exceptions and loopholes that might apply in specific circumstances.

An additional motivation for the support to detrimental housing policies might be poor anticipation of the indirect, and often unintended, policy effects. Dal Bo *et al.* (2018) provide evidence in support of this claim, showing that people may support welfare-decreasing policies because they systematically underestimate how individuals' behavior changes in response to the policy. This biases individuals to vote in favor of policies that create visible direct benefits (such as lower tax payments) and hidden indirect costs (such as demand-induced higher house prices or rents). Vice versa, voters may reject policies that increase social welfare but have tangible direct costs.

Neglecting general equilibrium effects seems particularly harmful in the case of housing policies. As documented above, a variety of general equilibrium effects and externalities are triggered by the endogenous response of individuals to economic incentives. Often these responses are difficult to

anticipate, even for economists. This is due to the specific implementation-details of the policies. This suggests that ill-advised policies might arise from the combination of both a poor understanding of the policy design and of the economic mechanisms triggered by it. In the context of housing affordability, the literature on this topic is sorely lacking with the exception of the work by Müller and Gsottbauer (2022), who show that individuals tend to be overly optimistic about the impact of rent control. When provided with evidence on the 'indirect' supply-side effect of the policy, those more in favor of the policy update their beliefs and decrease their support.

A final reason for bad policies is that voters simply choose according to their own economic incentives, even if this harms those that are targeted by the policy. Fischel's (2005) 'homevoter hypothesis' conceptualizes the link between homeowners' political voting behavior and property values. While perhaps not actively trying to maximize house values, homeowners try to protect their asset values by opposing policies that create uncertainty or might be financially harmful. Likewise existing homeowners may favor a policy that increases their asset values, even if the policy itself is completely ineffective (such as the MID). Hilber and Robert-Nicoud (2013) extend Fischel's view by illustrating how land use constraints are not the unilateral results of homeowners' decisions. Rather, they arise from a political game between the owners of developed land (homeowners and landlords) and owners of undeveloped land, with tight land use restrictions benefiting the former group and lax regulations benefiting the latter. As such land use restrictions, or housing policies that affect prices and rents for that matter, may be seen as the outcome of both voting and lobbying (Hilber and Robert-Nicoud, 2013; Solé-Ollé and Viladecans-Marsal, 2012). Renters are unlikely to be immune to promote housing policies out of self-interest, especially in countries like Switzerland or Germany where they are politically powerful. Oates (2005) argues that renters are more likely to support property taxation because they fail to realize that landlords charge them part of the tax via higher rents. Ahlfeldt and Maennig (2015) show that the support of 'leasevoters' (i.e., voters who rent their home) for policy initiatives differs from that of homevoters and that this is because some of the benefits of the initiatives are neutralized by adjustments in market rents.

As pointed out by Dal Bo *et al.* (2018), politicians and media might reflect, rather than correct, people's biases by supporting ineffective policies that have large support among voters. For example, policies aiming to increase the attractiveness of homeownership are often perceived as 'redistributive' policies. They are thus particularly popular amongst modest-income voters even though in most cases the main beneficiaries are higher-income households.

## 7 Future directions and challenges

The existing research on housing affordability and housing policies has mostly focused on the causes of the rising housing costs and on theoretically and empirically evaluating specific policies. One important caveat here is that rising housing costs do not necessarily imply lower affordability. This is because the increase in housing costs may be fully or at least in part driven by rising incomes and/or cheaper access to credit. Two important avenues for future research would thus appear to be to (i) conceptualize and implement more accurate measures of housing affordability and (ii) better identify the determinants of 'affordability' (rather than just housing costs for specific groups of society).

One limitation of existing theoretical research on the impact of housing policies on distribution outcomes and social welfare is the fact that they rarely distinguish between homeowners, renters and (absentee or local) landlords and, if so, they do it in a highly stylized way. This is an important drawback, as house price and rent capitalization has disparate effects for these groups. By separating these agents, future research could provide more insightful assessments of the distributional and social welfare impacts of housing policies. Another important limitation of much of the existing theoretical work is that it is assumed that all income groups spend a similar share of their incomes on housing expenditures. More recent evidence points to lower income households spending a much larger share of their incomes on housing, suggesting non-homothetic rather than Cobb-Douglas preferences.

Most empirical evaluations of housing policies focus on very particular outcome measures such as homeownership attainment, or prices, or rents. There is little research to date on the wider

distributional effects and the political economy of housing policies. Future quantitative research may also be able to move towards assessments, not only of the effectiveness of policies, but of the overall cost-efficiency, and of the social net welfare impact.

Most evaluations to date are on policies that either aim to increase homeownership attainment or subsidize rental housing for lower incomes. There are comparably few rigorous studies focusing on the margin between renting and becoming homeless. Future research may shed more light on the relationship between housing affordability and homelessness. In a similar vein, we know comparably little about the costs and benefits of informal settlements in developing countries and policies that aim to reduce such settlements. This has in the past been partly driven by lack of reliable data. As more reliable data becomes available, future research may shed more light on these issues and policies.

Finally, future research may design and propose institutional reforms that might resolve the conundrum that some of the most ineffective (and costly) housing policies are politically popular, whereas policies that could jointly address the root causes of the affordability crisis do not find much political support. Such policies could include innovative reforms of the planning and tax system. To sustainably address the broader affordability crisis for moderate- and middle-income households, planning reforms ought to ensure that planning systems focus on correcting market failures rather than catering to the self-interest of powerful groups. Tax reforms could be designed such as to better align the benefits and costs of residential development and, on the demand side, property or land value taxes could be designed such as to encourage a more efficient use of the scarce resource land.

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