The purposes of housing policy

Counteracting housing market malfunctions?

Andersen, Hans Skifter

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The purposes of housing policy.
Counteracting housing market malfunctions?

Hans Skifter Andersen
Adjunct professor
Department of the Build Environment, Aalborg University

Abstract
Housing policies have been designed very differently from country to country and the perception of them has varied among economists. A major reason for this might be that the fundamental purposes of housing policies are unclear. They have been introduced to counter actual problems in the housing market like housing shortage and problems with affordability, but it has not been entirely clear why the market has not been able by itself to provide a satisfactory and affordable housing supply. This article discusses, based on a review of the research literature, malfunctions of the market, which could justify public interventions.

Keywords: Malfunctions of the housing market, housing policy

Introduction
In all Western countries, some kind of housing policy is pursued, where governments regulate or subsidize housing construction and housing consumption to varying degrees. Housing policy interventions in the market have most often been decided by politicians on the basis of perceived specific problems with housing supply and housing quality. It has been difficult to justify these interventions based on general market theories. When economists have dealt with them, it has most often been about to what extent the policies have negative consequences for the supposed otherwise well-functioning market.

In recent years, an extensive literature has emerged on housing problems and their causes (Lee, Kemp and Reina, 2022; Anacker, 2019; Been et al., 2019; Gabriel and Painter, 2020; Galster and Lee, 2021; Haffner and Hulse , 2021; OECD, 2021; Wetzstein, 2017). The OECD report (2021: 52) documents that the share of housing costs in disposable income has increased by 5 percentage points in the period 2005-15, as an average in the OECD countries, and that it is especially the lowest income groups that experience a higher burden on income. In a current review article (Lee, Kemp and Reina 2022), the problems have been characterized as:

Housing affordability has been decreasing worldwide, particularly in the advanced economies, in recent decades. A fast-growing body of literature on housing affordability speaks to the global nature of the current urban housing affordability crisis and demonstrates that housing is becoming increasingly inaccessible for low- and middle-income households.

The problem is not only that housing costs have increased and made it more difficult for low-income families to pay for a home, but also that housing construction and housing supply in general have been inadequate (Gallent, Durrant and May, 2017; Bramley, 2007; Hallett. 2021; Griffith and Jefferys, 2013; Reid, Galante, and Weinstein, 2017; Erdmann, 2019; Hansson, 2018; Shostak and Houghton, 2008; Corinth and Dante, 2021; Hugh 2010; Yamada, 1999; Joint Center for Housing Studies, 2015; Desmond and Wilmers, 2019). It is especially in areas with increasing growth and migration that the problems have arisen (Mckenzie and Rowley, 2013). All this research has shown that housing markets have not been able to provide a good and affordable housing supply.

A question that has not been answered clearly in the research literature is why housing policy is necessary. Why isn't the housing market itself able to generate a supply of affordable and satisfactory housing for all? Why has there been a need to regulate and subsidise housing markets? As a consequence of this unsureness about the purposes of policies there is a widespread variation across countries with regard to the kind of policies that have been implemented. This has resulted in significant differences in housing markets across countries.

The purpose of this paper is to draw attention to some of the special features of housing markets that make them different from other kinds of markets, which means that ordinary market theories fail to explain what happens in the market. I review the discussion in the literature about consequences of the complexity of housing supply and demand and whether it is a single market or a system of linked sub-markets. Part of the literature deals with causes of disequilibrium in the market, with some pointing out that supply only responds slowly to changes in demand because the majority of the actual supply comes from the existing stock and depends on household mobility. Furthermore, that housing construction does not always respond adequately to increased demand, in some cases due to a lack of building plots, in others due to land speculation. Studies into how these disequilibrium problems are reflected in price formation are then described, and it is discussed to what extent new construction is able to counteract price increases in the market. It is shown that the formation of land prices is crucial. Finally, is reviewed the literature on how cheaper housing supply are made obtainable for low-income households, who cannot demand new and more expensive housing, but are dependent on that residential mobility and downgrading of existing housing create a supply they can afford.

In the last section the purposes of housing policies is shortly discussed in the light of the identified malfunctions of the housing market.

The complex housing market – segmentation

A major reason why the housing market is different from other markets is that dwellings are very dissimilar. Housing is a very complex good with many different qualities that are important for housing demand. There has been extensive research into the implications of this for how the housing market works and for which economic models can be applied to it.

A generation of American housing researchers in the 1970s (e.g. Kain and Quigley, 1975; Quigley 1979; Rothenburg et al., 1991) rejected the perception of housing consumption as being one-dimensional based

on the major problems that had been in determining income and price elasticities. Instead, a number of studies were carried out on the variation of house prices and rents with characteristics of the housing (hedonic price indices) and of elasticities for sub-elements of housing consumption, such as geographical location, housing size, house type, type of ownership, characteristics of the housing area, composition of residents, etc. (Rosen, 1974; Goodman, 1978; Freeman, 1981).

The results from the many studies have varied and reflect major data problems, as well as differences in methods and choice of investigated characteristics. Most of the studies have shown that there are many different qualities of the homes that have a distinct and significant influence on the price and on the elasticities of demand (Follain and Jimenez, 1985). The problem has been that the order of magnitude of the elasticities for the many different properties have been quite different depending on which data and which models have been used (see e.g. Chin and Chau, 2003; Herath and Maier, 2010; Hill, 2012).

The importance of the complexity of the housing supply for how the housing market functions depends on the extent to which housing with different characteristics can substitute for each other. The question that has been particularly discussed is the extent to which the housing market is divided into sub-markets with specific combinations of characteristics, which can only be substituted to a lesser extent with other sub-markets. A submarket is assumed to consist of housing that are reasonably good substitutes for each other, but poorer substitutes for housing in other submarkets (Kauko et al., 2002; Bourassa et al., 1999; Grigsby et al., 1987; Rothenberg et al., 1991; Whitehead, 1999). This is what has been called segmentation of the housing market.

Segmentation of housing markets is much influenced by the differences between the economic conditions in different tenures. Important for the market is thus the extent to which the economic conditions in different tenures differ much. The economic conditions in owner-occupied and rental housing and the relationship between them changes with business cycles. If homeownership only is obtainable for families with higher incomes and the economic advantages are great, segmentation will be strong. This is what Kemeny (1995) denoted 'dual housing markets'. It depends on tax relieves for interests and taxation of capital gains.

However, the fact that housing is a complex good does not immediately imply that the housing market is also segmented. This is only the case if some groups of households only demand housing with certain combinations of qualities (Gibler and Tyvimaa, 2014; Jones et al., 2004), and if there is some degree of discontinuity in these attributes. Segmentation assumes that the demand for certain characteristics is to some extent inelastic, i.e. with a small possibility of substitution between these attributes and other attributes of the home (Gibler and Tyvimaa, 2014). To what extent, for example, will a family with five members choose a home with three rooms over one with five, simply because it has a better location?

The degree of segmentation is of great importance for the functioning of the housing market, because the possibilities for increasing supply are not equally good in all parts of the market, as discussed below. Segmentation can mean that price and demand changes have more difficulty spreading between sub-markets and can lead to more or less permanent disequilibrium in parts of the housing market (Rothenberg et al., 1991; MacLennan and Yong, 1996; Gibler and Tyvimaa, 2014; Hilber and Vermeulen, 2016; Bangura

and Lee, 2022; Bramley et al., 2008). The existence of submarkets also implies that the actual price of a home may differ from the price that can be determined based on its characteristics (Galster, 1996; Maclennan and Tu, 1996; Jones et al., 2004).

Segmentation of the housing market has been sought proven empirically by examining whether sales prices or rents in some sub-markets deviate from the prices that could be expected based on hedonic price indices for the entire market (Rothenburg et al., 1991; Watkins 2008). Segmentation analyses has been used for price assessment of housing (Dubin et al., 1999; Adair et al., 1996; Bourassa et al., 2007; Watkins 1999) and in analyses of price bubbles and of reasons for insufficient supply in parts of the housing market (Hilber and Vermeulen, 2016; Bangura and Lee, 2022). It has also been an important theoretical starting point for analyses of the extent to which new construction also leads to increased housing supply in the parts of the market that are affordable for households with a lower income - the so-called filtering process, which is described in more detail at the end of the article.

Rothenburg et al. (1991: 514) showed, using a data set from 37 cities in two different years 1960 and 1975-76, that there was not the same price per unit of housing quality, but different prices in the different submarkets. Later studies have also been able to demonstrate the existence of segmentation to a greater or lesser extent, but with very different methods and divisions of the market. In some studies, cluster analyses or combinations of methods have been used (Kauko et al., 2002; Jones et al., 2004; Leishman, 2009; Gibler and Tyvimaa, 2014; Hilber and Vermeulen, 2016; Bangura and Lee, 2022; Bramley et al., 2008). In some analyses divisions of the supply side have been used, such as tenure type, home size or geographical divisions of the housing market in cities, in others the point of departure has been from the demand side, where data have been used on the housing preferences of different households and their mobility pattern between sub-markets (Jones et al., 2004; Gibler and Tyvimaa, 2014). The relevance of the demand-based divisions is supported by sociological studies, which show clear differences between preferences and moving patterns of different types of households, especially divided by life cycle phase (Skifter Andersen, 2010; 2011a; 2011b).

Insufficient supply. The crucial importance of residential mobility

What particularly distinguishes the housing market from other markets is that only a small part of the actual housing supply is produced. The building production of housing each year is only a very small part of the housing offered. In 2019, for example, approx. 30,000 new homes were built in Denmark, corresponding to just over one per cent. of the housing stock and only approx. ten per cent. of all the homes that became vacant and offered to new residents in the course of the year. The majority of vacant housing offered to housing seekers therefore comes from the existing housing stock. The supply of housing in the different forms of tenure here depends on residential mobility, which varies greatly between tenures. On average, it is approx. 13 per cent of the homes in the existing housing stock in Denmark, which are evicted in the course of a year (Skifter Andersen, 2021). Private rental homes have the highest eviction frequency (27 per cent), while owner-occupied homes in single-family houses have the lowest (6 per cent). Public housing has the second largest number of evictions, with 17 per cent. These differences in turnover mean that the housing composition of the actual housing supply is somewhat different from the housing stock as a whole. The rental properties make up only 39 per cent of the stock, but 2/3 of the housing supply, of which the 40 per cent. from the private rental sector (Skifter Andersen, 2021).

The crucial question here is to what extent residential mobility is affected by market signals like increasing housing demand and rising prices. Will increasing prices in a given submarket lead to increased mobility inside and out of the market?

A wide range of studies have shown that residential mobility is hampered by place attachment and social and financial moving costs. In the course of time the attachment to the dwelling and the neighbourhood is growing (Skifter Andersen, 2010; 2021). The sense of belonging that is built up over time to the home and the neighbourhood thus contributes to inhibiting mobility (Fischer and Malmberg, 2001), and the longer one has lived in a home, the less likely it is, all other things being equal, to move. Social, practical and financial costs of a move mean that one can accept major disadvantages by the housing situation and that there must be major advantages to be gained before choosing to move. For example, it has been shown that tenants often accept larger rent increases without moving (Bartik et al., 1992; Venti and Wise, 1984; Dynarski 1986; Galster, 1996).

Mobility has a strong connection with changes in the family's life cycle (Kending, 1984; Skifter Andersen, 2010; 2021). It is during the young years that most family changes occur with the formation of families and the birth of children. There is therefore high level of mobility among young people, but it drops sharply after family formation has been completed. Among the elderly, mobility is very low

Unfortunately, there are only a few economic studies of the significance of low mobility for housing supply (Megbolugbe et al., 1991; Kendig, 1984; Bartik et al., 1992; Dynarski, 1986; Marsh and Gibb, 2011). Megbolugbe et al. (1991: 389) stated *'The available empirical evidence shows that most households' housing consumption is not in equilibrium due to transaction costs'*. Other researchers have pointed to the importance in studies of the housing market of including factors explaining mobility (Marsh and Gibb, 2011; Hilber and Vermeulen, 2016).

A number of studies have looked at the effects of changes in housing prices and values for the mobility of residents in owner-occupied homes (see a literature review in Peng and Tsai, 2019). Most studies have looked at whether falling house prices lead to less mobility - the so-called 'equity lock-in' effect. They usually find some effect, especially if the owners become insolvent, but there are also studies that do not. Peng and Tsai (2019) find that rising prices generally have no effect on mobility in the shorter term, but some effect in the longer term.

Equilibrium problems

There is thus evidence that falling prices can decrease mobility and the supply of housing, but this is in situations where demand in general is decreasing, such as after the financial crisis in 2007. Of greater importance for equilibrium in the housing market is whether the supply increases as a result of increasing demand and prices. It is immediately difficult to see why rising prices should lead to significantly increased residential mobility. If the price of your home increases you also have to pay more for a new home, unless you change to a rental home. With increasing demand there will also be greater competition for the available owner-occupied homes. However, increased mobility because of increasing prices can occur in

situations where some households have had difficulty selling their home in a previous period due to the above-mentioned 'lock-in' effect, i.e. after a crisis in the housing market.

There is thus a significant knowledge gap regarding the significance of demand and price changes for residential mobility and vacant housing supply. It is as if there is a gap between the sociological research, which sheds light on the reasons for moving, but rarely includes the importance of market signals, and economic research that does not include important factors, such as the value of residents' social attachment to their home and the effect of family changes. However, research on the efficiency of the market, reviewed below, seems to show that there are major problems in getting supply to follow changes in demand and prices.

There is agreement that housing supply can only slowly adapt to changes in demand. Furthermore, that the complexity of the market (segmentation) enables parts of it to have more or less permanent problems with disequilibrium (MacLennan and Yong, 1996; Hilber and Vermeulen, 2016; Riddel, 2004; Kauko et al., 2002; Brzezicka et al. , 2018; Bramley et al., 2008).

Disequilibrium has been measured by looking at the extent to which the actual prices of owner-occupied homes in a national or local market deviate from the expected hedonically determined prices, in some cases also by comparing housing prices with rents (Bangura and Lee, 2022; André et al., 2014; Lo et al., 2022, Ambrose et al., 2013). In particular, many studies have been carried out into the causes of so-called housing price bubbles.

Previous studies have shown that the owner-occupied housing market adapts only slowly to changes in the market situation (Case and Schiller, 1989; DiPasquale and Wheaton, 1995; Mankiw and Weil, 1989). Ridl (2004) investigated price and supply changes in the US market in the period 1967-1998. He found that the market responded slowly to changes in demand and that this led to persistent periods of disequilibrium, particularly in certain regional markets. This is supported by a local study in Vancouver (Clayton, 1998: 41), which concludes *'The empirical results provide strong evidence against market efficiency'*. A recent study of the Polish market (Brzezicka et al., 2018) also shows long-term imbalances in the market. The authors argue that this is partly due to the fact that the Polish housing market has been in strong growth for a number of years. Costello et al. (2011: 653) concluded in a study of price developments in Australia from 1984 to 2008: *'Results provide evidence of periods of sustained deviations of house prices from values warranted by income'*. Ambrose et al. (2013: 477) found in a study in Amsterdam that house price deviations from 'fundamentals' can be persistent and long-lasting.

Especially after the financial crisis, there has been extensive research into the causes of housing price bubbles (see an overview in Bangura and Lee, 2022) that are seen as symptoms of disequilibrium. Bangura and Lee (2022) used a method to detect price bubbles by comparing housing prices with rents in three different parts of Sydney and found it particularly in an area with a large proportion of rental housing and relatively few owner-occupied homes. Furthermore, it was particularly areas with a strong growth in housing demand as a result of immigration or economic growth that experienced problems with disequilibrium. Mckenzie and Rowley (2013) also found major problems with housing shortages and high

house prices in a region of Australia where economic activity related to mining had been expanded for a period.

In segments of the housing market where supply cannot be increased by new construction – typically older, dilapidated and cheaper housing, which is in demand by low-income households – there is a risk of a greater and more permanent disequilibrium. Rothenburg et al.'s (1991) extensive empirical study of the housing market in a number of cities in the USA showed large differences in the supply reactions in different parts of the housing market. The supply was most inelastic in the parts of the rental market where the cheapest housing was found. It was concluded (Rothenburg et al., 1991: 515) that '*No consistent indicators of medium-run supply elasticities in the lowest-quality renter submarkets could be observed'* and that these submarkets function as residuals on the market. The authors explained this (op.cit.: 418) by the fact that households must have a minimum housing consumption, which they cannot reduce (except by sharing housing). This means that there are few substitution opportunities in the lower part of the market, and that demand is very sensitive to price and supply changes in the adjacent submarkets with medium-quality housing, which was documented by measured cross-elasticities. Other studies have also shown that rents in the poorest part of the housing stock in the USA are relatively high compared to the quality, and that the development has led to a higher financial burden on the poorest (Barton, 2011; Desmond and Wilmers, 2019).

The problems with disequilibrium and lack of supply are found especially in the rental market. The demand for rental housing can to a certain extent be considered a residual in relation to the owner-occupied housing market, and is influenced by how the business cycles affect the demand for owner-occupied housing. The extent of problems with excess demand therefore varies with business cycles, so that the rental market is under pressure when demand for owner-occupied housing falls, and conversely is relieved in periods when more people want homeownership. This meant, for example, that rents stagnated in the USA in the 70s, when the demand for owner-occupied housing was high (DiPasquale and Wheaton, 1992). In the 80s the demand for owner-occupied housing fell, which led to real rent increases of approx. 15 per cent in the first half of the 80s.

Insufficient housing construction

In the shorter term, there are only limited opportunities to increase the supply through new construction when demand increases. But the question is how quickly construction can bring equilibrium to the market and what significance it has in the long term. The above-referenced studies of more or less permanent problems with housing shortages and affordability indicate that there may also be problems in the long term in achieving an adequate supply of housing.

A large part of the literature on why housing construction is insufficient concerns the extent to which this is due to planning restrictions limiting the supply of building plots, or to various factors delaying construction unnecessarily, e.g. that building permits can be time-consuming. In recent years there have also been studies, which indicate that even if there are lots available, they are not always built on, because land and real estate have become passive investment objects. This is what some have called the *'financialisation'* of the housing market (Aalbers, 2016; Gallent et al., 2017; Bradley, 2021).

In some cases analyses of the elasticity of housing construction are based on economic 'stock-flow' models for estimating how new construction reacts in the long term to price changes on the housing market. However, it is a method that has produced very variable results depending on where it has been used and over what period of time (see e.g. Dipasquale, 1999; Vermeulen and Rouwendal, 2007; OECD, 2011; Morley et al., 2015). In the OECD's analysis across countries price elasticities were thus found that varied from over one in countries such as the USA, Sweden, Denmark and Canada to under 0.2 in the Netherlands and Switzerland. The results probably say more about problems with this type of models than about differences between the countries. As formulated by Dipasquale (1999:16): '*While time-series modeling based on aggregate data seems a reasonable approach to examining the determinants of new housing supply, the anomalies in the results are surprisingly consistent across the various studies undertaken'*. Vermeulen and Rouwendal (2007:2) also conclude: '*conventional models of competitive land and housing markets cannot account for these findings'.*

There have been quite a few studies - especially in the USA - that look at the significance of spatial planning and local regulation of the supply of building plots for new construction and the housing market. Most of these studies find a correlation between the degree of regulation and the extent of housing supply, but there are large variations in the results and many other factors are identified that are important (Lin and Wachter, 2019; Quigley and Rosenthal, 2005; Monk and Whitehead, 1999; Beitel, 2007; Dong and Hansz, 2019; Knaap et al., 2007; Peng and Wheaton, 1994). It has generally been difficult to find objective data for different types of regulations, and to correct for other factors that affect housing construction. Quigley and Rosenthal (2005: 69) believe that it is difficult to derive the actual connection from the many studies. *'Caps on development, restrictive zoning limits on allowable densities, urban growth boundaries, and long permit-processing delays have all been associated with increased housing prices. However, the literature fails to establish a strong, direct causal effect, if only because variations in both observed regulation and methodological precision frustrate sweeping generalizations.'*

There is a Danish study, which has examined in detail how the supply and pricing of building plots has actually taken place in Denmark (Bogason and Mandag Morgen, 2008). The study was carried out at the end of the boom before the financial crisis and sheds light on the reasons why the supply of land and housing construction did not increase sufficiently at the beginning of the 00s despite large price increases in the housing market. The motives of both the local authorities and construction companies/developers have been investigated. An important explanation for the development was that the construction market in most municipalities cannot be seen as a traditional market. It is characterized by a few, strong decision-makers, especially local authorities and developers, who often have neither the capacity nor the incentive to increase supply. The local authorities' primary interest has been to avoid the municipal economy becoming unbalanced as a result of excessive demands for new investments in infrastructure and municipal institutions. For the developers, it was also important to keep the expansion of the market at a level that they could match financially and in terms of capacity. Nor have they been interested in too large a supply of building plots, which could mean that the value of their acquired sites could fall in value.

There is probably no doubt that restrictive planning can delay housing construction and reduce the scope, especially if it depends on local political decisions, which will have to take into account other considerations than securing housing supply. This applies especially in municipalities in larger urban areas that are part of

a larger common housing market, where local housing problems play a smaller role. But this is hardly the main reason why there has been too little new construction in many places. In many cities, there are physical restrictions on how much land can be used for building sites (Saiz, 2010). There is also much evidence that a main reason is that housing shortages and high housing demand among the lower income groups do not sufficiently trigger non-subsidised new construction because of inertia and segmentation in the housing market. There have been many examples of new construction being too low despite an ample supply of building plots, as described below.

The hypothesis that local regulation of the supply of land is of decisive importance for housing construction has played a particularly large role in Great Britain. On the basis of a government study (Barker, 2004) a planning system was introduced that forced local authorities to make forecasts for housing construction five years ahead and lay out a larger number of plots to ensure a sufficient supply. However, experiences with the system have shown that a large supply of land does not ensure sufficient housing construction (Sgueglia and Webb, 2021; Gallent, Durrant and May, 2017; Bradley, 2021; Guthrie, 2010; Bramley, 2007).

A major reason is what has been called 'financialisation' of the real estate market. A commonly accepted definition of the term is that there is a growing dominance in the housing market of financial actors and institutions, e.g. capital funds, with mainly financial motives for their investments (Whitehead and Scanlon, 2022; Aalbers, 2016; Wijburg and Waldron, 2020). For these actors earnings from construction projects is not necessarily the dominant motive for investment, but rather holding assets that can be expected to increase in value and provide capital gains over time. This development has occurred as a result of historically low interest rates and increased efforts to place capital in safe investments in countries with stable economies (Gallent, Durrant and May, 2017). Some have argued that especially the big players on the capital market have good prerequisites for making money in the real estate sector. Developments in the real estate market are difficult to predict because the market is very sensitive to business cycles and complex and poorly functioning. The major financial players have a better overview of the macroeconomic changes that affect the housing market and are thus better able to predict future developments in property prices (Whitehead and Scanlon, 2022).

The financialization of the property market in the UK and the USA has contributed to the fact that building plots in urban areas are not always exploited, but are considered financial investments (Bradley 2021; Gallent, Durrant and May, 2017; Guthrie, 2010). It has also been pointed out that especially the larger construction companies, due to the instability of the construction market, often build up a 'stock' of plots that they can exploit when the economic conditions become favourable (Guthrie, 2010; Bradley, 2021; Paccoud et al., 2022). Bradley (2021) estimated that 40-50 per cent. of potential new homes, covered by planning permission in England in 2020, have not been built.

It is thus not always planning restrictions that are to blame for housing construction being too low. The Danish study from 2008 (Bogason and Mandag Morgen, 2008) also showed that the larger developers liked to make long-term investments in land, also in agricultural land that can potentially become an urban zone. These mechanisms have an impact on the price development of land and new construction. We will look at what this means for price developments in the housing market in what follows.

Inappropriate price formation and price bubbles

Due to the sluggishness in construction production and supply of vacant housing house prices have a strong tendency to rise in periods of increasing demand, which we have, for example, seen it in the period before the financial crisis and during the corona epidemic. In the literature, strong price increases that cannot be explained by the factors normally expected to determine housing prices have been termed price bubbles (Stiglitz, 1990). Measuring price bubbles, and explaining their causes, has been one of the most discussed topics in the literature (see an overview in Bangura and Lee, 2022 and Smith, 2011). However, according to Bangura and Lee (2022) and Leung (2004), satisfactory explanations have not been given as to why price bubbles occur.

An often cited theory is Shiller's (2007) hypothesis that they are due to speculative behaviour of house buyers. He assumes that house buyers overestimate the future increases in house prices and therefore buy homes at too high prices. The argument is in accordance with the traditional view that the purchase of a home is an investment decision that, in principle, has no relation to housing demand (see e.g. Arnott, 1987). But this view is not in accordance with actual studies of housing demand and housing choice that show that homeownership, especially in detached houses, has special utility characteristics that are important for housing seekers (Skifter Andersen, 2011a). Home seekers are also often in a situation where they have an urgent need for a new home, which they cannot, or do not want to, postpone, which is why they are prepared to pay rising prices as long as they can afford it. Strong price increases must therefore rather be explained by increasing demand that the market cannot honour due to segmentation and sluggish supply.

Monopolistic land price formation promote raising house prices

It is crucial for the understanding of the housing market as reasonably well-functioning that excessive price increases will be limited by increased supply from new construction that, with sufficient competition in the market, will be able in the long run to supply housing at 'cost prices'.

However, a large part of the price of housing consists of land costs. Decisive for the argument is therefore the extent to which reasons can be provided for the availability of what can be called 'cost prices' on land. As a starting point, it is assumed that urban land prices are determined by their alternative uses, e.g. as agricultural land, as well as the costs of developing them for construction.

But as described above, in all western countries there are greater or lesser restrictions on how large the supply of land can be among other due to the zoning of land. In most parts of the cities there are also few undeveloped sites and they have very different values depending on the location. This applies especially in central parts of larger cities. This means that the market for land has a monopolistic character (Yamada, 1999).

In addition land, as described above, has been 'financialized', i.e. became a passive investment asset. Land ownership has increasingly been seen as a safe investment in a time of low interest rates and continued economic growth and urbanisation, where demand for housing and land is expected to increase around major urban areas. These speculative investments help to increase land prices and prevent them from falling when demand for new construction falls.

Parallel to studies of what land zoning means for the supply of land and housing construction, there are also a number of studies of what the restrictions mean for the price level of land and housing. Studies demonstrating that more restrictive regulation is the cause of rising prices are, for example, Peng and Wheaton (1994), Glaeser, Gyourko and Saks (2005), Mckenzie and Rowley (2013), Ihlandfeldt (2007), and Evans (1987). Here, too, there have been large variations in what the studies show about the importance of restrictions and land policy for prices. It has, among other things, depended on the extent to which there is growth in the urban area (Lee et al., 2022). Other studies have shown a weak correlation between the supply of land and developments in housing prices (Bramley et al., 2008; Costello and Rowley, 2010). For example, Buxton and Taylor (2011) did not find that increased land supply in Melbourne had any particular effect on land prices.

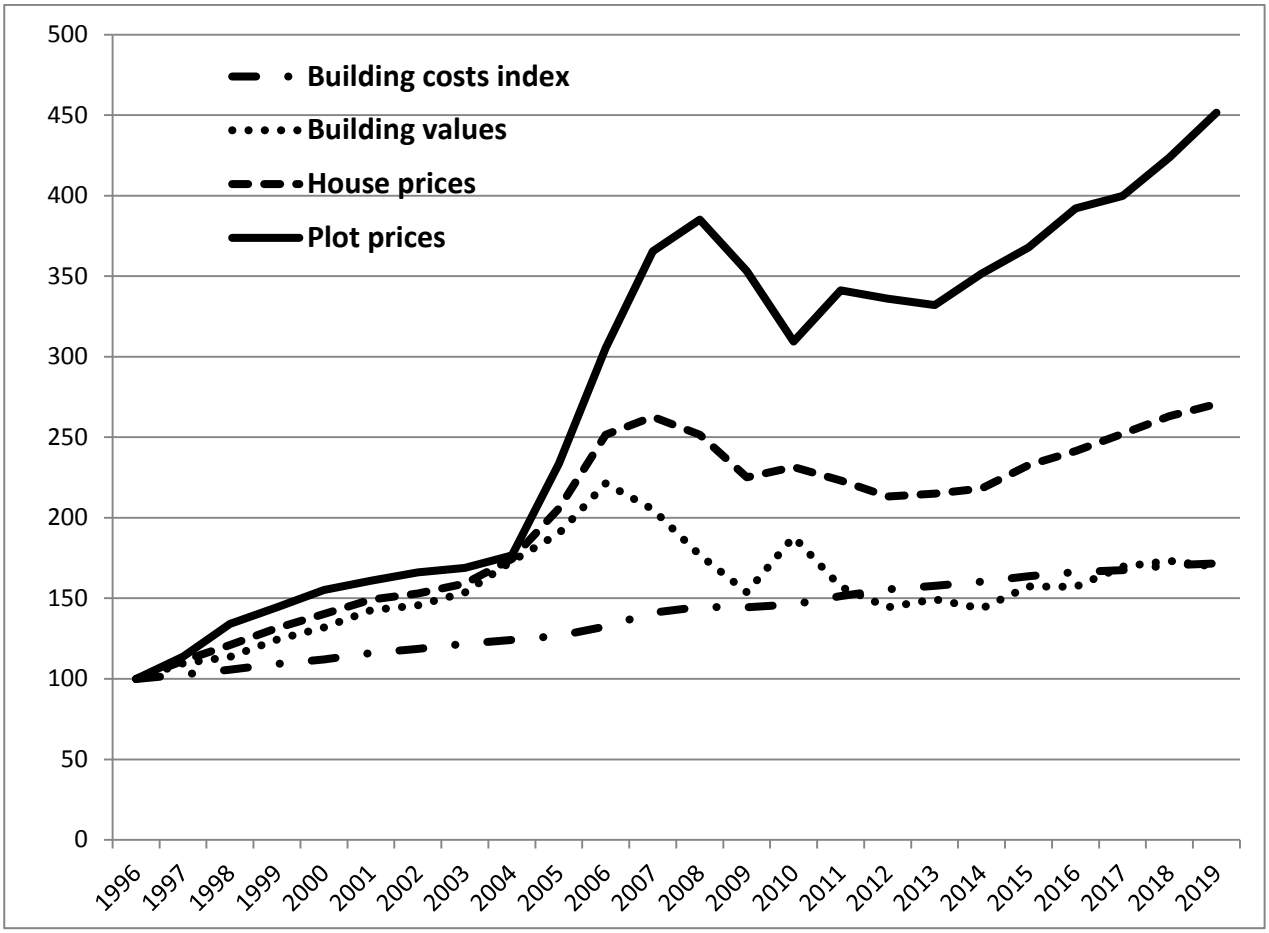
Land prices and housing prices are linked, but the connection can be explained in two different ways. One is that house prices are determined by land prices, which are formed more or less independently of house prices. The second is that it is housing demand and housing prices that determine land prices.

A few studies have been made of the connection between land prices and house prices. Altuzarra and Esteban (2011) examined the relationship between house prices and land prices over a number of years in regions of Spain where there are relatively few restrictions on the supply of land. They used a statistical method called Granger causality to determine which of the two time series is leading over time, thereby determining the relationship between them. They found that the development of land prices over time was determined by housing prices, but not the other way around. The same result, using the same method, was found by Wen and Goodman 2013 in a study in Chinese cities and Ooi and Lee (2006) in a study in Singapore. They hypothesize that one of the reasons is speculative investments in land, a hypothesis also put forward by Peng and Wheaton (1994) and Guthrie (2010).

In the Danish qualitative study (Bogason and Mandag Morgen, 2008) of how land prices are set in the collaboration between local authorities and developers, it is also a clear conclusion that the sales prices are set based on the market prices for housing, i.e. what the homes on the built-up plots can be sold for. This is, among other things, a consequence of the legal requirements that require the local authorities to sell their land at market price.

The monopolistic nature of the land market means that prices increase over time in line with increasing prosperity in society and increased willingness to pay for housing. We can illustrate this with the development in Denmark. Lund Andersen (2022) has developed a method to estimate the development in prices of building plots, and the proportion they constitute of house prices, based on data on houses bought for demolition and subsequent new construction on the plots. Figure 1 shows a figure from the report which compares the development in the estimated plot prices throughout the country 1996 - 2019 with the development in housing prices, the estimated building values (sales prices minus plot values) and an index for the construction costs.

Figure 1: Index for the development of prices for single-family houses, plot prices (500-2,000 m2), building values, housing prices and construction cost index, the whole country, 1996-2019, 1996 = 100



Source: Lund Andersen (2022), Figure 6.4.

Looking over the entire period 1996-2019, the calculated plot prices rose 350 per cent., while housing prices (single-family houses) rose 170 per cent. and the construction costs 70 per cent. The plot price's share of the house price increased from 36 per cent. in 1996 to 60 per cent. in 2019. In the capital area, plot prices rose by 440 per cent. over the entire period.

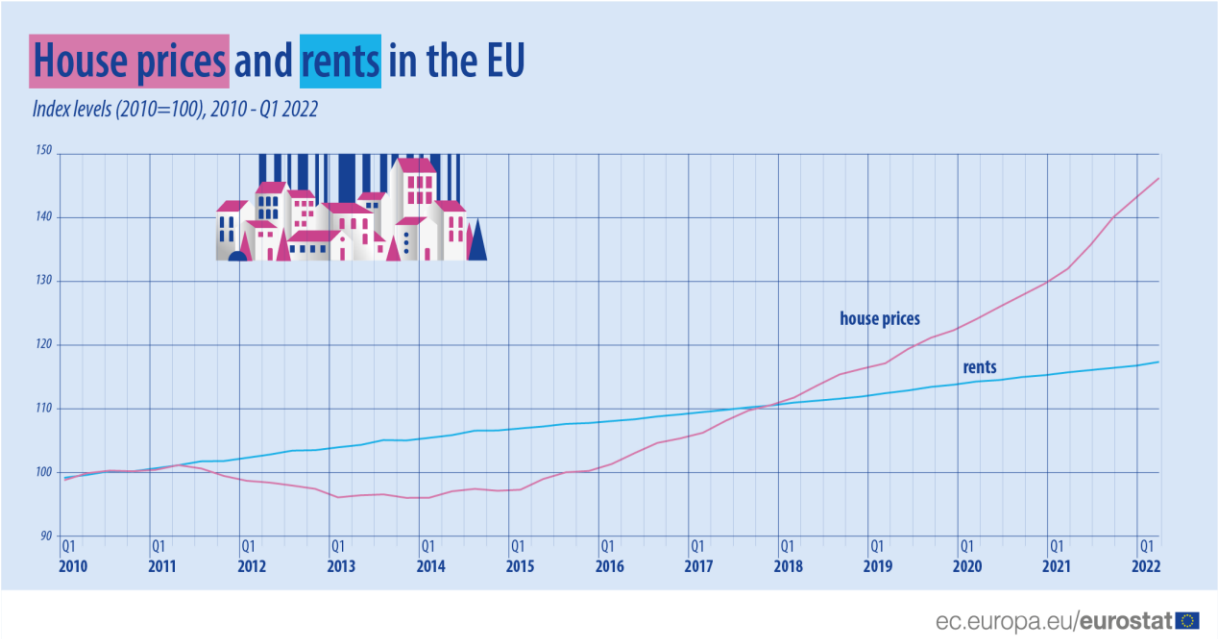
It was especially in the period 2004-08 that prices rose. The financial crisis led to a fall in plot prices until 2010, but only by a third of the previous increase in 2004-08. The course illustrates what in the literature is called 'ratchett effects', that land and property prices are easy to rise, but more difficult to fall again (Khandani et al., 2009; Guthrie, 2010; Yamada 1999; Whitehead and Scanlon, 2022). This has a connection with the fact that land to a greater extent has become an investment asset, where investors expect that short-term price drops will be replaced by longer-term increases as a result of proceeding economic development, and therefore do not lower the price.

Rents are less affected by market fluctuations

As described above the rental market can be seen as a residual in relation to the owner-occupied housing market and that the demand for renting is expected to increase when there is a falling demand for owner-occupied housing. Especially in cities with few rental properties this can be expected to lead to greater problems with disequilibrium in connection with changing business cycles. One should therefore expect

fluctuations in rents at the opposite rate to the changes in housing prices. Eurostat's statistics on the development of house prices and rents shows, however, that this has not been the case in the EU in the last 12 years (Figure 2).

Firgur 2. The average development in house prices and rents at constant prices in the EU 2010-22. (source: Eurostat https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220708-1).



In the period 2010 to 2022, there have been large fluctuations in house prices, while rents have undergone a steady increase of a total of approx. 17 per cent. in fixed prices. The expected pressure on the rental market in the first part of the period has thus not led to significantly higher rents. The growth in demand for homeownership after 2016 has not led to stagnant rents either. However, the generally increased price level for land and real estate during the period has led to a steady increase in rents.

The fact that rents do not fall when demand falls can partly be explained by ratchet effects. Studies of rent setting in the USA have, for example, previously shown that landlords prefer to leave apartments vacant rather than lower the rents (Rydell, 1977). The lack of an effect of the expected increase in demand for rented housing in the period 2011-14 is more difficult to explain. Apart from the effects of rent regulation and generally falling demand for housing, this could be due to landlords lacking an overview of developments in the market. This is, however, less likely to happen in an age with extensive information about the market on the internet.

The market fails to provide housing for lower income families

Since the 1950s, there has been a tradition of empirically oriented research in the USA (e.g. Grigsby, 1963) that dealt with how the housing market can satisfy demand for cheaper housing that cannot be provided by new construction due to its high quality (building legislation) and price. The starting point was that the limitations in the technical/economic possibilities for adapting the supply from the existing housing stock to the demand from households with lower incomes made it necessary to continuously redistribute housing between income groups. A possible explanation for how the housing demand of low-income groups could

be satisfied was formulated through the so-called "filtering theory". The theory states that dwellings in the course of time go through a filtering process where they with increasing wear and tear become relatively cheaper and are transferred from the higher income groups to the lower ones. The poor are thus dependent on that the more wealthy households moves to new construction from older dwellings as these wear down or become technically obsolete, thereby releasing a housing supply with lower prices and quality. Residential mobility, and the factors that determine it, were considered to have a significant impact on the filtering process. Grigsby et al. dealt with studies of the extent to which this was the case in the 50s and 60s.

A basic assumption for the filtering process has been that housing becomes relatively cheaper over time – partly because of wear and tear, and partly because new construction is of a higher quality, which attracts households with higher incomes and weakens the demand for older housing (Ohls, 1975). The first prerequisite is that homes become less valuable over time and that this happens to a sufficient extent to make the filtering effective. However, actual studies of how much dwellings lose value over time show that this happens to a very different extent and depends much on factors other than the age of the buildings. There is no evidence that buildings automatically deteriorate with age because they can maintain their value through maintenance and renovation (Skifter Andersen, 1995; Margolis, 1982; Rosenthal, 2014).

The likelihood for filtering has been very dependent on the common development of urban neighbourhoods. In the post-war period there was a migration of the middle class from the central districts of cities to the suburbs in the United States. This created a drop in housing demand in the city centres, which led to decay and slums (Skifter Andersen, 1995). Some of the slum housing disappeared from the market because it became vacant or was demolished. This development also created better housing opportunities for low-income families (Weicher and Thibodeau, 1988). However, studies of the rent structure in the USA showed that homes in the cheapest part of the housing market have relatively high rents in relation to their quality, and that they were not particularly much cheaper than other older homes of acceptable quality (Griegsby, 1963; Muth, 1969; Stegman, 1972; Rothenberg et al., 1991).

From the end of the 1980s there was a change in the demand for housing in the central city districts, which were increasingly found attractive to the middle and upper classes. This led to new investments in housing and rising prices, what has been called 'gentrification'. This later development has counteracted filtering, and in some cases reversed it, as run-down and cheaper housing has been upgraded or demolished (Wyly and Hammel, 2004). However, urban neighbourhoods in the US have developed very differently depending a lot on their qualities and location (Somerville and Holmes, 2001). Gentrification made it more difficult for low-income groups in the US to access affordable housing (Malpezzi and Green, 1996; Skaburskis, 2006; Zuk and Chapple, 2016; Desmond and Wilmers, 2019; Barton, 2011).

In the US the widespread ethnic segregation has, moreover, had a major impact on the functioning of the housing market (Skifter Andersen, 2019). Urban areas dominated by African-Americans and Hispanics are avoided by the white middle class and do not so often become gentrified, but instead have a greater risk of slums.

There is no disagreement in the American research that the extent of new construction has an impact on the housing supply from the existing housing stock, but there are very different results from the studies with regard to how much and how, especially of the extent to which it creates better housing opportunities for the lowest income groups. As one might expect, this depends a lot on the nature of the cities studied, on the local housing market and on the current economic situation, e.g. the degree of inequality and population growth with pressure on the housing market.

More recent studies of how effectively the filtering mechanism works have most often examined the extent to which house prices in the older stock fall over time relatively to the rest of the housing market or in relation to income development (Skaburskis, 2006; Kim et al., 2013; Brzezickaa et al., 2019; Been et al., 2019; Rosenthal, 2014). Other studies have examined how households with different incomes move up or down between housing and urban areas of different price and quality (Mast, 2019; Zuk and Chapple, 2016; Magnusson Turner and Wessel, 2019). Some studies have particularly focused on the importance of new construction for filtering and for housing supply for low-income groups. Other studies have examined the so-called 'movement chains' – the extent and character of residential moves and vacant homes a newly built home gives rise to, directly and indirectly.

Rosenthal (2014) used data from the American Housing Survey for the period 1985-2011 to examine the extent to which households moving into older housing received relatively lower prices and had lower income over time than those moving into newly build housing. The relative price changes for owner-occupied homes showed only limited filtering, but based on the income changes he calculated a depreciation rate of 0.5 per cent. per year for owner-occupied homes and between 1.8 and 2.5 per cent. for rental housing. In addition, he found that many owner-occupied homes changed tenure over time to rental. However, it was primarily in declining cities and urban neighbourhoods that filtering was higher, while in growing cities it was low. This was also found by Somerville and Holmes (2001).

Rosenthal's study showed an average of the development in the USA. Kim et al. (2013) investigated three questions, based on data from urban areas in the city of Orlando 2000-2011: 1. What do differences in the characteristics of urban areas mean for filtering?, 2. What is the significance of the location in relation to the urban core? and 3. Does filtering vary between periods of time with different conditions in the housing market? They measured the filtering by changes over time in the relationship between house prices and income in urban areas and by changes in the price level in relation to the whole city. During the downturn in the housing market after the financial crisis there was a positive correlation between the age of the homes and the changes in income and price levels, while the opposite was the case in the growth period 2000-07. It was especially urban areas with a high proportion of African Americans that had increased filtering, but here again only during the downturn. Contrary to expectations, new construction and building renovation had no effect on the filtering in the urban area where it took place, but may have had an effect in other areas. A significant result was also that filtering occurred both in the central areas and in the suburbs, but in different time periods. Filtering in the suburbs occurred most during the decline period, while it was strongest in the central areas during the growth period. The results can be explained by the changes in the demand in the different periods. During the period of growth, more people from the middle class moved out to the suburbs, leaving vacant homes in the centre, while this did not happen during the period of decline.

Skaburskis (2006) illuminated filtering in 23 urban areas in Canada by looking at differences between housing of different age in terms of incomes, prices and rents. He also examined price and rent developments 1981-96. He found that the age of dwellings had no particular effect on the level of income in rental homes, except that the income in the very newest was higher. The differences between dwellings in different age groups were more significant in owner-occupied dwellings. Rents and prices in the older housing stock rose more during 1981-96 than prices in new construction - a kind of reverse filtering. Skaburskis explains this by the increasing gentrification of the older neighbourhoods, which involved that higher income households moved into neighbourhoods formerly inhabited by low income groups, who were displaced (see also, for example, Helms, 2003).

Zuk and Chapple (2016) examined the relationship between new construction in different regions of California and changes in the income composition of the urban areas. It is a general problem in California that low-income households have got fewer housing options over the years and are being pushed out of many urban areas. The study examined how the extent and nature of new construction has influenced this displacement. They found that increased new construction overall reduced displacement, and that the reduction was twice as great when building subsidized social housing as for private build. Furthermore, there was a tendency for the effect of private construction to disappear over a longer period. In the central neighbourhoods of the larger cities new construction had no effect on displacement. The authors interpret this as being a consequence of the fact that new construction has often taken place in urban areas in growth, which is accompanied by gentrification.

Mast (2019) examined the moving chains from new construction in 12 US cities to determine the extent to which this resulted in moves away from neighbourhoods with lower average incomes. He assumed that this was a sign of that households had moved from poor to better housing. In general, he found that the most frequent moves were from districts with lower incomes to districts with higher ones. He estimated that, on average, 100 new rental housing units moved between 17 and 39 households away from districts in the lowest income quartile. The weakness of the study was that there was only data on the location of households and homes, not on their actual incomes, housing characteristics and prices.

One of the main conclusions of these American studies is that filtering depends much on how different urban areas develop, which has had a major impact on the development of housing prices and quality (Skaburskis, 2006; Kim et al., 2013; Zuk and Chapple, 2016). The value and price of housing depends a lot on its surroundings. Homes located in run-down and poorly located urban areas are, all else being equal, worth less than similar homes in attractive areas. There has been a tendency in the USA for run-down and cheap housing in run-down urban areas to fall into disrepair and possibly demolished, while in well-functioning areas they are renovated and improved (Skaburskis, 2006, Skifter Andersen, 1995). It is expectations for the future development in an urban area that are decisive for whether dwellings are filtered down or the opposite. Urban areas in decline thus provide the greatest opportunities for filtering.

Studies of filtering are mostly carried out in North America, but there is also a study from Poland. Brzezicka et al. (2019) investigated the correlation between the extent of different kinds of newly built housing and the development in prices 2010-17 in the existing housing stock in different parts of Warsaw. They used the

previously mentioned statistical method Granger causality analyses to determine to what extent it was the prices of new construction that determined the price development in the existing housing stock, or vice versa. If new construction leads to filtering, increased new construction should lead to relatively falling prices in the existing stock, but the study showed the opposite. It was price increases in the existing stock that led to increased prices in new construction. It also showed that rising prices in the central parts of the cities spread to the suburbs.

Can housing policy reduce the malfunctions of the housing market?

Actual problems with housing shortages and affordability have been the reason why politicians in most western countries have found it necessary to introduce regulations of the market and subsidies for housing and residents. However, the need for such policies has not been acknowledged by most main stream economists, who believe that the housing market works reasonably satisfactorily and that much housing policy is harmful to the market. Therefore, housing policy in many countries has been weakened in the last 30 years and housing markets have become more liberalized, at the same time as increased problems with housing shortages and high housing costs have appeared.

As described in this article extensive international research has pointed to the fact that the housing market in many ways is quite different from other markets, and that some fundamental problems prevent the market from producing a satisfactory housing supply for all in society.

Housing is a complex good with many different characteristics and locations, which means a considerable differentiation of both supply and demand. This leads to a more or less significant division of the market into sub-markets that function separately from each other. This result in that excess demand and rising prices in one sub-market may have difficulty spreading to other sub-markets, which hampers the efficiency of the market and means that in parts of the market there can be a greater disequilibrium at the same time that other parts have less.

One of the most serious imperfections by the housing market is the sluggishness of the supply. The demand for housing changes constantly. During economic booms the demand for owner-occupied housing increases, which is matched by a relative decrease in the demand for rental housing. The reverse happens in recessions. The housing market has difficulties managing these fluctuations because supply reacts slowly to changes in demand. The vast majority of the supply comes from the existing stock of housing, but vacant housing only appears when residents choose to move, and housing mobility is only moderately affected by rising demand and prices. Furthermore, new construction only reacts slowly to increased demand.

There has been an extensive literature that has dealt with the reasons why new construction has not had a sufficient scale in many countries. Many studies concern problems with a too low supply of building plots as a result of land restrictions and public bureaucracy. It has, however, been shown that insufficient housing construction has also occurred in places where the supply of land is plentiful. Two possible explanations have been given for why vacant building sites are not always used, even though there is a high demand for housing. One of them has a connection with the fact that increased demand for cheaper housing in the existing housing stock does not generate sufficient demand for new construction due to the segmentation of the housing market and sluggishness of supply reactions. The other explanation has been linked to what

has been called the 'financialisation' of the property market. Land and real estate has increasingly become the subject of financial investments, where the main motive is the expected future capital gains more than achieving a current return from property management and construction. Therefore, for such investors it is less important whether vacant building sites are utilized now or only sometime in the future.

It has been a fundamental assumption in the housing debate that new construction will be able to solve housing problems in the long run and will limit price increases on the housing market, because new homes are built at 'cost prices'. This requires that there is a sufficient supply of building plots that are provided at prices, which are independent of the prices on the housing market. However, the research literature shows that prices on building plots are determined by house prices and not the other way around. Rising prices for housing thus lead to rising prices for land, without housing construction necessarily increasing sufficiently.

This means that the housing market has a monopolistic character where prices are determined by the affordability and willingness to pay among the home seekers. There is not much 'consumer's surplus' on the housing market, because one rarely pay much less than the maximum price one is willing to pay. The significant price development in the last 25 years has therefore been determined more by the development in the households' incomes and willingness to pay than by the development in the construction market.

The relatively rapid changes in demand, segmentation and problems with supply lead to disequilibrium in parts of the market for shorter or longer periods. This has particularly happened during periods of strong growth in population and employment in an area. There has mostly been focus on the consequences for what has been called house price bubbles. However, there are also studies that have pointed to risks for a more permanent disequilibrium in the lower part of the housing market where the supply cannot be increased by new construction – typically older and cheaper housing. The literature on the so-called filtering process has shown that new construction does not have a sufficient effect for the supply in the lower parts of the market. Other studies have shown that rents in the part of the housing stock with the lowest quality are often relatively high when measured in relation to the quality of the housing. This lack of sufficient supply and higher rents especially affects low income families, who have difficulties in finding affordable housing of a reasonable quality.

The most important policy measure to counter these problems on the housing market has been to introduce subsidised social non-profit housing with restrictions on rents. In many countries, however, social housing only have been a smaller proportion of the market, and some countries have reduced it in recent years by allowing sales to homeownership or private landlords. Social housing should provide housing for households with lower incomes, but it has not been much researched to what extent this is the case and what the broader effects are for the housing market. Social housing contributes to segmentation of the market and could hamper mobility because rents are lower than other parts of the market. Many mainstream economists are opposed to subsidised housing for these reasons (see e.g. the discussion in Galster, 1997 and Yates and Whitehead, 1998).

There is a more general agreement on the usefulness of housing allowances, which is believed to make much less distortion in the market. However, if the price setting of housing is somewhat monopolistic housing allowances will contribute to increasing demand and prices and rents. If that is the case the effects

for housing affordability may be limited. The same argument can be put forward against tax deductions on mortgage interests.

The most disputed kind of housing policy has been rent or price control measures. It has been a general statement in the literature that rent control is harmful to the market. It is argued that it reduces mobility, creates disequilibrium in the market and prevents investments in housing renovation and new construction (Rajasekaran et al. 2019). Rent control has, however, been designed in many different ways with very different effects. Some distinguish between rent control and rent stabilization, which is a weaker kind of regulation aimed at securing tenants against unjustified price increases.

The evidence on malfunctions of housing markets presented in our review of the housing market literature in this article contributes, however, to more positive views on advantages of rent control and weakens the criticism of its negative effects. It has been shown in the literature on housing mobility that residents tend to stay in their dwellings even when rents are increased because of their strong attachment to their home. Limitation on rent increases thus prevents landlords from capitalising the social and economic moving costs of tenants. Rent control will, depending on to what extent controlled rents are different from uncontrolled in the market, reduce incentives to move when housing needs are changing. The literature on mobility shows, however, that rents and prices in the market do not have decisive importance for if people choose to move, because family and work changes are pivotal. So the effects of rent control on mobility may not be particularly large. Data from Denmark shows, e.g., that the regulated private renting sector has the highest mobility rate on the market where 27 per cent. of the dwellings are vacated every year. This is much larger than in owner-occupied housing (9 per cent.). Rents in private renting in the country is only regulated in dwellings build before 1990 so regulation does not have a negative effect on new building; it has most probably had a positive effect. Moreover, the regulation is designed to make it possible for landlords to improve and maintain the dwellings with a reasonable economic return (Skifter Andersen 1992). Rent control can thus be designed to preserve a stock of affordable rental housing with reasonable economic returns to landlords and without severe damages to the market.

A major objective for housing policies should be to limit the fast increasing land and property prices. In growing cities with increasing demand for building plots it is not possible to avoid increasing land prices, but it is important to lessen the price increases that are due to monopolistic price setting and speculation. Ample supply of building plots sold with obligations to build housing is important, but not sufficient as the reviewed British experiences have shown. Speculation in land and properties could be countered by increased taxes on capital gains. As described housing price bubbles, following fluctuations in the market, tend to raise prices more permanently because of ratchet effects. Therefore, price fluctuations should continuously be countered by customizing funding regulations to lessen the demand for mortgages in situations with overheating of the market.

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