Reducing the heated dwelling space in Denmark

A dynamic and challenging puzzle

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Reducing the heated dwelling space in Denmark: A dynamic and challenging puzzle

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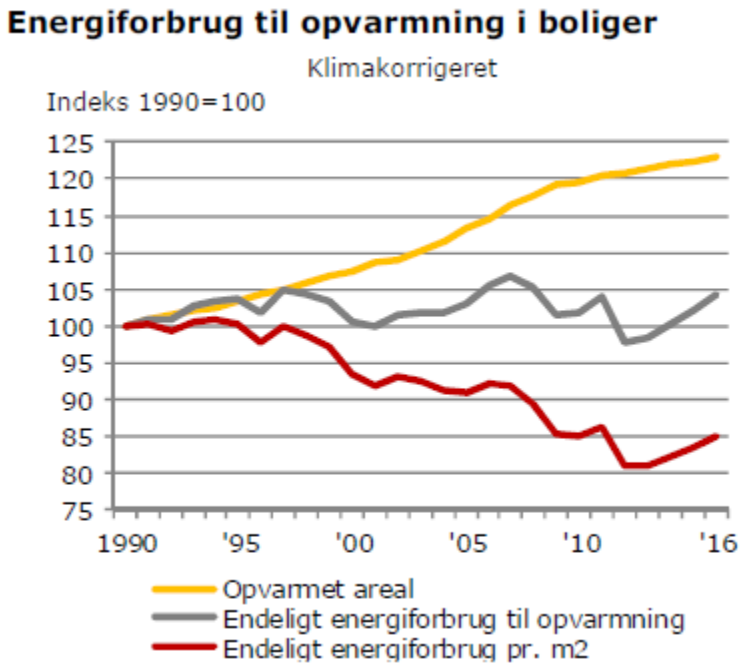
In relatively cold countries such as Denmark, the energy use for residential heating takes up a considerable part of household energy consumption. Therefore, the reduction of this category of energy use has been on the political agenda since the oil crises in the 1970s. Considerable results have been achieved, first of all by the widespread use of cogeneration and district heating, supplemented by improved heating installations in houses outside district heating areas, the gradual tightening of building regulations for new houses, renovations of the existing housing stock involving better insulation, and campaigns encouraging households to reduce the room temperature and apply night set-back (Christensen et al. 2007). These initiatives have ensured a substantial reduction in the heat consumption per square meter. As illustrated in the figure below, energy use per square meter (red line) fell by 15.1 % from 1990 to 2016, but simultaneously, the heated space (yellow line) increased by 23.0 %. As a result, energy use for residential heating (including hot water) (grey line) was 4.5 % higher in 2016 than in 1990. As population during this period grew by 11.9 %, i.e. less than the growth in the heated space, the long-term trend of an increasing number of square meters per person continued. In spite of the obvious importance of the amount of dwelling space for the total energy use for residential heating, the continued growth of the number of square meters per person is seldom questioned, and the issue hardly figures in Danish energy policy. The intention with this paper is to contribute to pushing this issue higher up on the agenda.



Source: (Energistyrelsen 2017: 36)

The Danish dwelling space in an international perspective
In general, the total use of dwelling space in a country increases with national income. However, differences between countries with the same level of national income are large. One of the obvious

determinants is population density: With 337 persons per km^2 in Japan, it is no surprise that floor space is limited in comparison with Denmark, where the population density is 126 persons per km^2 (the European average is 114). In 2013 each Japanese had on average 22.3 m^2, while each Dane in 2016 had 52 m^2, increased from 43 m^2 in 1981. The number of m^2 per person differs according to the number of people in the household. In 2016 the Danish averages were:

Single person households: 84 m^2
Two-person households: 60 m^2 per person
Three-person households: 42 m^2 per person
Four-person households: 36 m^2 per person.[1]

Also cultural differences play a role. As for instance Gullestad (1992) has emphasized, homes are particularly important in the Nordic countries in comparison with the Southern part of Europe. Historically, this may relate to the need for staying more indoors in the Nordic countries, while Southern Europeans have better possibilities for socializing outdoors and have developed traditions accordingly.

(Include examples of other countries with a large use of floor space (USA, Australia), influenced by other factors. Concluding that Denmark is in the high end, but the issue is relevant in several countries).

Floor space in an energy perspective

The literature on the importance of floor space for energy consumption is rather limited, but some key insights can be identified. Based on empirical material from Australia, Fuller and Crawford (2011) describe how the expansion of suburban areas has co-developed with increasing house size. Over the last 50 years, the average house size has risen dramatically, and the size of new residences is now more than double the average in the 1950s. The authors argue that both the location and the size of the housing have contributed considerably to increasing greenhouse gas emissions. Stephan and Crawford (2016) take this analysis further by quantifying the effect of house size on life cycle energy demand, demonstrating that larger houses use more energy both in the form of embodied energy due to increased use of materials and in the form of operational energy for heating, cooling and lighting. However, as the life cycle energy demand increases at a slower rate compared to house size, building regulations tend to favour large houses by measuring energy efficiency per m^2. Among other things, the authors thus suggest that energy efficiency regulations should correct the energy intensity thresholds for house size. In the same vein, Viggers et al. (2017) argue that building regulations should be future-proofed by considering trends in dwelling size. Insulation requirements have been increasing, but increased house size tend to cancel out the effect of improved insulation, as the energy needed to heat a new larger dwelling can be similar to that required to heat an older smaller one. In England, Australia, Canada, the USA and New Zealand, this point is particularly relevant in relation to stand-alone dwellings, as their floor-area has been increasing faster than the floor-area of average apartments. Also the study by Clune et al. (2012) highlights the importance of house size for CO_2 emissions and concludes that further research is needed "to develop a more comprehensive knowledge base on the drivers and behavioural motivators affecting overarching trends of house size and consumption more generally in the residential policy arena" (p. 666), thus providing a nice outset for this paper. A recent study from New Zealand by Khajehzadeh and Vale (2017) adds a further motivation for studying house size: they calculate the embodied energy of furniture, appliance and tool items and show that this increases significantly with house size rather than with household size.

(The literature identified is primarily from Australia. American studies?)

[1] Sources: Denmark: https://www.dst.dk/da/Statistik/nyt/NytHtml?cid=21543 (includes information also on larger households), https://www.bolius.dk/danskerne-faar-mere-og-mere-plads-i-boligen-36883/ based on Boligopgørelsen: http://www.statistikbanken.dk/10064 Japan: https://resources.realestate.co.jp/living/how-much-living-space-does-the-average-household-have-in-japan/

Research questions
The intention with this paper is to promote the consideration of the environmental impacts of floor space both in the public discourse and when policies are formed in various areas, such as policies related to housing, finance, taxation, patterns of settlement, and business development. In order to do so, it is decisive to understand how the phenomenon has emerged: How has the increase in square meters per person come about historically? What are the present trends: Which forces tend to continue this development, and which forces tend to change the trend? What could be the points of intervention?

This formulation of the research questions is not intended to imply that policies should only be devised with an eye to environmental implications. The intention is to add an underexposed concern to the many other issues that usually dominate the debate on housing and patterns of settlement. Important concerns include, for instance, the increasing social division in settlement patterns, the generational problems related to housing and capital gains, the economic instability related to housing markets, and the relations between the geographical movements of the population and housing needs. Sometimes the concerns may call for conflicting policies, sometimes several concerns can be accommodated by the same policies.

While acknowledging other concerns related to housing, we are clearly questioning the sensibility of continued growth in the number of m^2 per person. Considering the need to reduce carbon emissions and to limit the area taken up by human settlement in order to leave more habitat for other species, sufficiency ought to be on the agenda in a country with high living standards. The challenge is to promote sufficiency in a socially acceptable way that ensures reasonable living standards for all.

Theoretical approaches
It is obvious that the amount of dwelling space emerges as an effect of a complex set of socio-technical processes. The question is how to approach this complexity. In sustainable consumption studies, it is increasingly acknowledged that the interplay between systems of provision and household practices should be taken into account when studying consumption trends and possibilities for intervention (McMeekin & Southerton 2012, Hargreaves et al. 2013, Røpke 2015, Welch & Warde 2015). Furthermore, it has been argued that cross-cutting systems related to distributional issues play an important role in the development of consumption (Røpke 2017), implying that the concept of consumption junction as a "meeting place" between provision and demand may be too narrow. This paper draws on these approaches, but in a loose way where the concept of systems is replaced by a less well-defined idea of domains or aspects. Rather than trying to explicate the interplay between a certain provision system and household practices in relation to housing, or trying to identify a certain practice architecture around housing practices (Kemmis et al. 2014), the paper outlines various dynamics that can be considered to be economic, political, social, material and technological aspects of long-term processes. The aspects, which are not clearly distinguishable from each other, are intertwined as illustrated in the figure below. The illustration also indicates that each aspect has a history and a future. The dynamics are constructed through professional and everyday practices, but it would be a story without end to go back to these practices – "convenient summaries" (Nicolini 2017) are needed. The following account thus involves both zooming out and zooming in. The figure also illustrates that the account intends to provide some pieces of a puzzle, but of course the account is far from exhaustive.

In relation to the economic aspects of the account, we draw on insights from ecological economics (a biophysical perspective), heterodox perspectives on markets as only one possible way of organizing allocation and distribution, as well as mainstream descriptions of housing markets.

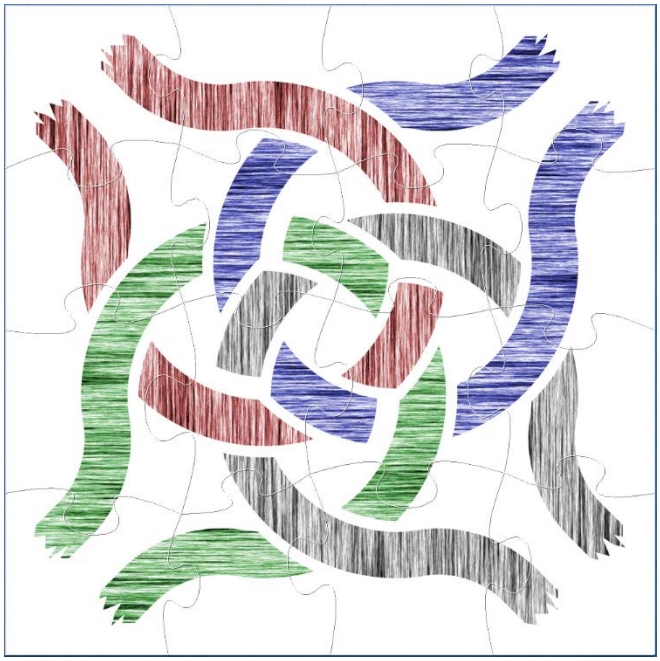


Illustration: Tim Nøhr Elkær.

Long term changes in housing

In a long-term historical perspective, a sizable housing problem emerged from the interrelated development of industrialization, population growth, the rural drift and urbanization. In Denmark, population grew from about 800.000 in 1769 to 2.45 mill. in 1901, 4.28 mill. in 1950 and 5.66 million in 2015[2] (and the number could have been considerably higher, had not many people emigrated). More recently, there was a baby boom during WWII, which repeated itself as a smaller boom in the late 1960s. Based on these pressures, it has been a long-term political priority to ensure sufficient housing, in particular for the political parties representing the least favoured social groups.

After WWII the discourse on housing standards focused first on providing a number of housing units that would make it possible for each household to have its own home. For a long time after the war, it was very difficult for people with average incomes to get their own home as single-person households, because married couples had priority, and even couples had to be lucky. In 1965 85,000 households did not have their own home, and this number did not include persons, who would like to establish their own household if possible (Wendt 1972: 69). Over a longer period, however, the improvement was significant: While there were nearly 4 persons per dwelling in 1930, there were only a little more than 2 persons per dwelling in the mid-1980s (Wendt 1994: 44). A second priority was to improve the standard of installations, as many people did not have their own toilets or bathrooms. In 1955 about 25 % of all homes had neither their own bath, nor toilet. This number was reduced to 10 % in 1965 (Wendt 1972: 67), and in 1993 only 2 % did not have their own toilet (Wendt 1994: 49). Regarding the size of dwellings, the authorities in the mid-1960s defined a good standard as a dwelling with one more room than the number of persons in the household, whereas dwellings with more than two persons per room was considered “overcrowded” (p. 71). In 1965 48 % fulfilled or exceeded this norm, 27 % had one room per person, 23 % less than that, but not being “overcrowded”, while only 1.3 % was in this category (p. 73). In 1991 81 % fulfilled or exceeded the norm, 16 % had one room per person, and only about 3 % had less (Wendt 1994: 48). Measured in m^2, however,

[2] Sources: http://www.statbank.dk/10021 and http://denstoredanske.dk/Danmarks_geografi_og_historie/Danmarks_geografi/Danmark_generelt/Danmark_-_befolkning

many of the dwellings were considered too small. For instance, 220,000 dwellings with 2 or more rooms were below 60 m^2, and a similar number of dwellings with 3 or 4 rooms were below 75 m^2. Nearly half of the dwellings with 2 rooms did not fulfill the requirements in the legislation concerning housing benefit. Wendt (1994: 49) thus concludes that this demonstrates a considerable need for combining dwellings. This statement as a matter of course more than twenty years ago is illustrative of the increase in expectations regarding housing standards.

Intertwined with the increase in housing standards, various internal migration processes took place. Many people migrated from the countryside to the cities, and particularly from the 1960s onwards, people also moved from crowded city centers to suburban areas, where a large number of single-family houses were built. The changes often involved increasing floor area, both because the new houses replaced smaller flats for many people, and because the farmhouses became homes to fewer residents. A similar phenomenon can be seen today, where internal migration leaves many village houses in the countryside with few residents or even empty. In this case, migration tends to result in excess supply of cheap housing in some areas and thus increases average floor space as a sort of side effect rather than a desirable achievement.

Political-economic dynamics

While industrialization, demographic change and considerations of hygiene constituted pressures behind the political attention to the provision of more housing, the process also involved and created many more drivers that are able to keep up momentum far beyond any conception of sufficiency. Several drivers emerge from the combination of market economic organization and the peculiar characteristics of housing as a service.

In many ways, housing differs from other products and services that form part of consumption. In the vocabulary of economics, housing is a service delivered for a certain period of time. The service is produced by a combination of fixed capital in the form of a building and the work of caretakers and administrators. Inputs of intermediary products and services in the production of housing as a service include materials for repair and maintenance, refuse disposal, water supply and waste water treatment, energy supply, insurance, etc. The value added directly in the production of the service (thus excluding the value of the inputs of intermediary products and services) is first of all attributed to the building. In statistical terms, only 3 % of the value added goes to the payment of wages, while 97 % goes to the owner of the capital stock (the building) (Wendt 1994: 12). Compared to many other services that are often very labour-intensive, this distribution is unusual. The service is inextricable from the building, which is an expensive type of capital stock. Since housing, like many other services, can neither be stored, nor exported or imported, the owner of the building can have a strong incentive to ensure the use of it.

The quality of housing as a service depends not only on the characteristics of the building, but also on the location of the building. For instance, the access to nearby natural resorts, cultural activities and public transport plays an important role. These amenities can be seen as location services that are produced by a combination of the area input and various social processes over long periods of time. The value of most amenities can thus be seen as created by the community rather than the individual efforts of the owners or users of separate parts of the area. Furthermore, since land cannot be produced (with the rare exception of land reclamation), the value of land tends to rise over time due to increasing scarcity. This does not make society as a whole richer, but depending on societal organization, the rising value of land can have huge distributional implications. When land is privately owned, income is transferred from the users to the owners of the land, and when the products and services produced on the land are sold on markets, this transfer often takes place through the prices of these products and services (Wendt 1994: 9f).

The societal organization of the provision and distribution of housing emerges through a long historical process, enmeshed in power struggles around the ownership of land. In Denmark, this has resulted in

private ownership of most land. Furthermore, most buildings, like other parts of the produced capital stock, are privately owned. Although the production factors that are necessary to produce housing are, to a large extent, in private ownership, it does not follow that access to housing necessarily must be acquired on markets. For instance, the state could pay private producers to provide housing and allocate the service based on other criteria than ability to pay. Since housing is a basic need, there could be good reasons to do so. In practice, markets play a key role in the allocation of Danish housing, and the regulation of these markets is decisive for their effects.

Housing involves a number of interrelated markets, in particular:

- The markets for the service of housing
- The markets for trading the key inputs to the production of housing: land and existing buildings
- The financial markets providing the funding for buying land and existing buildings and for initiating new construction
- The markets for the construction of new buildings.

In addition, social housing plays an important role. From the late 1800s, cooperative housing societies were established by the labour movement and gradually received public support for new construction. In this sector, the allocation of housing is based partly on waiting lists, partly on social criteria, as municipalities have a certain share of the dwellings at their disposal.

The organisation of housing is fraught with distributional problems that also have an impact on the increase in floor area. Due to private ownership, a key issue relates to the emergence of capital gains and the more seldom losses. Capital gains do not only occur in relation to land, but also in relation to buildings. One of the reasons is that buildings have a long useful life and that the costs of producing them change over time. The market value of the building stock is determined by the production costs of new buildings. Since these costs (including the cost of funding) for long periods of time increased more than the general rate of inflation (partly because the building and construction sector is mainly a domestic market trade), the owners of existing buildings have experienced considerable capital gains (Wendt 1994: 10f). Other reasons for capital gains can be scarcity of housing as well as housing bubbles with roots in finance. Since houses can be a source of capital gains, this can constitute a strong motivation to stay in a house that has become too big due to changes in the household (kids have left home, divorce or death). Paradoxically, periods with capital losses can also imply a tie-down, because an insolvent owner hopes for future price increases.

Sometimes the owner of a block of rented flats cannot realize capital gains because rents are regulated. Then the gains accrue to the tenants who pay a lower rent than tenants in newly built flats with a similar size and quality (i.e. a rent that is lower than the quality-adjusted rent). The same phenomenon applies to social housing. The implication is that tenants in older flats have a strong incentive to stay in flats, although they may have become too big due to changes in the composition of the household.

Tax regulations constitute another important driver behind the increase in floor area. To make this point, some background must be provided. As mentioned, housing can be seen as a service that is mainly produced by a building. When this building (a house or a flat) is owned by the occupant, he or she can be seen as the organizer of a production, who sells the service of housing to him- or herself. When a business owning a housing block hires out a flat, the business has an income in the form of rent that will be taxed. As a parallel to this taxation, the owner of an owner-occupied house or flat is similarly taxed, based on the imputed rent value of own dwelling. In principle, it would make sense to do the same for other home production such as, for instance, the use of private laundry machines or private cars, since they have comparable commercial counterparts in the form of laundry services and taxi driving. Obviously, this would be too complicated, but housing is so expensive that it makes sense. This line of reasoning also relates to

GDP accounting where the imputed value of own dwelling is necessary to avoid absurd results – such as a fall in GDP when people buy their own house instead of renting one.

Continuing the parallel between taxation of business and home production, it is also necessary to consider what can be subtracted from the income before it is taxed. A business can subtract the costs involved in providing the service such as the wages for the caretakers and the maintenance costs. A similar, but standardised deduction can be made by home owners who often carry out this work themselves. While this makes sense, it is much more controversial that interest payments are considered to be costs. In biophysical terms, it does not make sense to consider money as a factor of production. The building is a factor of production, but the ownership of the building does not influence the service provided and the income earned by selling the service (such as maintenance work does). Therefore, the division between the owner's own capital and foreign capital should not influence taxation. This view is not reflected in tax regulations, which are strongly influenced by the interests of business and finance. Interest payments are thus considered to be costs that can be subtracted from income before taxation (encouraging the use of debt capital), and this procedure is transferred to the calculation of the net income related to owning one's home. Particularly in periods with high interest rates, the results turned out to be increasingly unacceptable, as the tax relief on interest was much higher than the imputed value of own dwelling. Basically, home owners received a huge subsidy, and because of the progressive tax system, the value of the subsidy was higher the higher the income of the home owner. The results were absurd already from the 1960s[3], but it was not until the late 1980s that a process towards reducing the value of the subsidy was set in motion. Before 1987 the value of the tax relief could amount to 73 % of the interest payment, while the value is now about to be reduced from 33 % to 25 % in 2019.

This subsidy to home owners created considerable discontent among tenants who could not subtract anything from their tax bill. To balance the interests between owners and tenants, and to counteract the problem related to the large disparities in rents between old and new flats, a system of housing benefits was introduced in 1966. Furthermore, new subsidies for the construction of social housing were introduced in order to keep down the rent in new flats. The continued tension between the interests of home owners and tenants contributed to the development of huge subsidies to housing consumption for rich as well as poor, as well as a complex array of vested interests. In particular, "safeguarding the interests of home owners" has become a very strong political symbol that politicians to this day have to take into account. No doubt, these trends have promoted the extension of the total floor area and made it difficult to question the desirability of the development.

In addition to the tension between home owners and tenants, private ownership of land and buildings also creates a generational conflict. The drivers behind capital gains imply, as a long term trend, that it becomes ever more expensive for newcomers to become home owners. In order to counteract this problem, politicians have provided more attractive funding options such as non-amortized loans, access to purchase with low down payment, flexible interest rates etc. However, as anticipated, such opportunities are quickly capitalized in prices and basically constitute a gift to those people, who are the owners at the time of the introduction of a new measure. The inequalities created through the markets for houses and flats make it more difficult to achieve a reasonable allocation of floor area according to the needs of different households and thus contribute to keeping up a pressure to build more. Increased supply seems to be the obvious way to counteract increasing prices.

However, even increased supply may not be sufficient to counteract price increases, because the financialization of the economy, which has become ever more pronounced since the 1980s, has turned houses and flats into key objects of speculation – and important revenue opportunities for the financial

[3] The title of a contemporary left-wing book was "Danish Housing Policy. Crime or Stupidity?" (Wilhjelm 1971).

sector. Denmark thus experienced a housing bubble that burst with the financial crisis from 2008. Presently, a new bubble may be emerging in the big cities.

Socio-economic developments like Airbnb can make it possible for people to keep or move into larger dwellings than they could otherwise afford. In cases where Airbnb causes higher prices, the opportunity of capital gains also encourages the acquisition of larger dwellings.

(Not yet covered: the drivers of and barriers to new construction; the use of construction in the regulation of business cycles; technological changes and standardization in the building industry, making it cheaper to build more floor space; the incentives for municipalities to promote the construction of dwellings that can attract good taxpayers rather than the dwellings that might be needed to solve social problems).

Floor space for household practices

The increase in floor space cannot come about without the contribution of households. How can we understand the willingness of households to play their part in the processes? It is not difficult to understand the need for more and better housing during the decades following WWII, but the demand for more floor space seems to continue to grow. How can we make sense of that? As explained above, the subsidies encourage the consumption of housing, and at the same time, the opportunity for capital gains makes the investment in a house or a flat attractive. The dwelling can serve as an ATM to be used gradually, as pension for the owner or as heritage to the descendants. But the dwelling is also the place where a large part of life is lived. Does this life call for more space?

First, it is common to emphasize the trend towards increasing individualization. In general, it has become possible for young people to leave home and establish their own households, for old people not to be dependent on living with their relatives, for couples to divorce, for couples to live apart, and for all household members to have a room of their own and sometimes their own bathrooms too. The share of the population living in one-person households has increased considerably, calling for relatively more floor space for kitchens and bathrooms.
(Does individualization call for an explanation? Why did this cultural change come about?)

Floor space can be seen as a material aspect of the practice of living (or dwelling). However, when we refer to the practice of living – e.g. saying "I live here" – it just means that this is the place where we usually sleep and take some of our meals. In itself, this does not require much space, but "dwelling" can be seen as a sort of heading covering a large number of practices. To figure out why dwelling seems to require more floor space, we have to consider the development of the practices that call for space in the home. For instance, an increasing number of people work from home part of the week and arrange for some dedicated space for this purpose. At the same time, the opportunity to work from home part of the time make it acceptable to people to live further away from their workplace – in places where floor space is cheaper.
(Other examples of specialized rooms? Studies on this?)

Another practice calling for space is socializing. While there may be little need for large sitting and dining rooms in the everyday life of small households, they are nice to have on occasions of "peak demand". Similarly, spare bedrooms are useful for guests staying overnight.

Space is also needed for storage. People store all the stuff they use for the broad array of practices, in which they participate – and sometimes the stuff for practices, in which they once participated, and in which they would like to participate in the future (Sullivan & Gershuny 2004). With increasing income people can afford to buy more stuff and to diversify by buying specialized equipment for various aspects of a practice. In addition to furniture and decorative stuff, many homes are thus filled with huge amounts of

clothes, books, tools, cooking equipment and ingredients, sports gear, toys, and many other things. Individualization is reflected in several items of the same kind. The phenomenon of "peak demand" repeats itself with regard to the storage space for the equipment needed for the yearly skiing holidays, for Christmas decoration, for being able to set the table for guests, for maintenance of the house, and so on. As the increasing use of supplementary commercial storage demonstrates, many wish to store more stuff than they can accommodate in the home.

Distribution of floor space

One of the main reasons for the ever increasing floor space stems from the difficulties related to the redistribution of the available space. If households with large space per person do not move and give room for households in need of more space, there will continue to be a pressure for providing more space. The pressure may also be kept up when space is more available in places with low demand than in places with high demand due to internal migration. In general, the distribution of housing tends to be characterized by considerable inertia.

As mentioned, there are strong economic incentives to stay in owner-occupied dwellings due to the prospect of capital gains and in flats that have relatively low rents because of the time of construction. In addition, many other aspects add to the lack of flexibility. Some of these relate to the markets for trading existing buildings. Markets for houses have various unique characteristics compared to many other markets for consumer goods[4]:

- As mentioned, houses are both capital goods and providing a service for consumption at the same time
- Houses are more durable than most other goods
- Houses cannot be moved (except for mobile homes which are rare in Denmark)
- Housing markets are local, and at a given point in time, only few sellers and buyers are in the market
- It takes a long time to increase the supply of new houses to adapt to increasing demand
- As houses are very heterogenous, the market is not transparent, and information asymmetries can be large
- Buying a home is the biggest investment, most people undertake during their lifetime
- Most people trade seldom in this market and are not familiar with the procedures
- Both the transaction costs and the moving costs are considerable.

Several of these characteristics contribute to inertia, because it is demanding, costly and risky for most people to engage in the market. The choices made can have long term impacts on one's quality of life. To anticipate the concluding discussion, housing market characteristics may question whether markets are really the best allocation mechanism for dwellings.

The inertia has many other roots than economic incentives and market characteristics. First of all, people tend to get an emotional relationship with their homes. In particular, many home owners invest much work in improving and adapting their homes, which can make it hard for some to move away. Similarly, when people fill their homes with stuff, to which they have an emotional relationship, it can be difficult to move to something smaller. The feeling of having amble space may also be addictive, involving what Shove (2003: 194f) describes as a ratchet effect: It is easy to go in one direction and get used to more space, but difficult to scale down. Also the practical problems related to moving can seem insurmountable, while on the other hand, practical challenges in relation to the maintenance of a big house can be a motive for moving. In addition, returning to the market characteristics, it can be difficult to find a suitable alternative dwelling, for instance, when people wish to stay in the same local area. When elderly people wish to move from the

[4] See e.g. https://en.wikipedia.org/wiki/Real_estate_economics

countryside to a city, they may not have sufficient equity in their house to fund even a smaller dwelling in the city.

Sometimes policies contribute to the inertia in the redistribution of housing. For instance, elderly people are encouraged to stay as long as possible in their own home through social support arrangements and through the access to freezing of property taxes. A particular challenge is the political conflict related to social housing. Like in other European countries, social housing is under attack from right-wing politicians, who want to make it more difficult for municipalities to contribute to the construction of social housing. This may decrease the availability of smaller flats that could ease the redistribution of housing space in a socially acceptable way.

Reducing the dwelling space

The starting point of this paper is a call for reducing the dwelling space over time – or at least, to avoid the ever increasing floor space per person. The analysis of the dynamics behind the increase can open for ideas regarding potential intervention points, but at this stage of our work, we can only hint at a few directions for the discussion.

In a short-term perspective, it would be obvious to try to improve the distribution of the existing dwelling space. In the large cities, housing has become so expensive that young families have difficulties finding reasonable accommodation, unless they have very high incomes or wealthy parents. The traditional political response is to build more and to provide cheap funding, which contribute to the continued increase in dwelling space. Redistribution still seems to play a limited role. As the opportunity for capital gains seems to be one of the main barriers for redistribution, it would be obvious to limit this opportunity. To some extent, this may be done by patching up the tax system, but it is not easy to find workable constructions. In the longer term, it could be more effective to challenge private ownership of land and buildings. In many ways, private ownership forms the basis of undesirable outcomes such as the amplification of inequalities, generational conflicts and economic instability. Furthermore, the characteristics of markets for owner-occupied dwellings contribute to the construction of housing as a large-scale lottery. But the ideology of private ownership is so strong that even ideas for constructions involving long-term rights of use would meet with considerable resistance.

When houses and flats are owner-occupied, the service of housing is distributed through the markets for houses and flats. With a different system of ownership, the service of housing would have to be distributed in a different way. This could be through markets with distribution based on ability to pay, or it could be through various systems of queing. A combination of the two might ensure reasonable basic housing to all as well as the distribution of more luxurious services based on the ability to pay. Simultaneously, the more luxurious services could be made more expensive, which could discourage the use of large amounts of floor space, without making housing inaccessible for low-income groups.

Another challenge is to counteract the ratchet effect that tends to normalize ever increasing dwelling space. The question is whether and how the ground can be prepared for a reduction of expectations. One approach could be to highlight what some individual households already do, when they manage with limited space: Which practical solutions do they apply? Do they develop different patterns for socializing? Do they avoid accumulation of stuff? It is also worth highlighting households who cooperate in ways that make it possible to combine a small everyday living space with the opportunity of using shared facilities for “peak demand”. Maybe living labs could be used to experiment with new approaches.

Whereas the suggestions above relate directly to the issue of floor space, it is important to emphasize that this issue should be seen as an aspect of a wider set of problems. Otherwise, there is a risk of promoting initiatives and investments that later may turn out to be undesirable. Looking ahead, the environmental

and social challenges call for complex considerations regarding what sustainable housing and settlement patterns would imply in the future. The point is not to suggest a “predict and provide” approach, based on demographic forecasts and assessments of economic development and related internal migration trends. The suggestion is rather to consider which directions we would like to take from a sustainability perspective. Just to indicate the complexity, environmental concerns may call for a radical reshaping of human settlement in a long-term perspective. One concern is the energy consumption and carbon emissions related to housing and transport, but at least as important is the need to leave more space for other species. Probably, this challenge involves a transition in land use and agriculture, maybe towards a more labour-intensive permaculture approach. Will this require more people in the countryside? If this is the case, can they then be housed in an environmentally friendly way? Can some of the present villages be developed in a desirable direction? In addition to the environmental concerns, issues such as social segregation are important to take into consideration in future work on reduction of dwelling space.

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