

Economic Commentaries

Perspectives on housing construction

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Housing construction in Sweden has increased sharply in recent years and is now at levels that are reminiscent of the period prior to the crisis of the 1990s. This development is welcomed by many who think that there is a shortage of homes due to too little construction over a long period of time. There are others, however, who think there is a risk of over-construction. This commentary investigates the need of housing and looks at how increased construction can affect the housing market. The findings indicate that the shortage of housing is mainly limited to Sweden's metropolitan regions.

After a relatively long period of low housing construction, new construction has picked up and the number of completed homes in 2016 is at its highest level since the early 1990s. In 2016, construction, excluding conversions, was started on about 60,000 homes, which is the second-highest figure ever recorded and in the years immediately ahead, construction is expected to be even higher.² This development is positive as most municipalities state that they have a shortage of homes. A prolonged period of low construction in Sweden has led to a build-up of the housing need.³ The Swedish National Board of Housing, Building and Planning, Boverket, estimates this need to be about 130,000 homes and deems that 600,000 homes will be needed up until 2025.⁴ There are, however, those who think that these estimates exaggerate the housing shortage and that there is now a risk that the large increase in housing construction could lead to a fall in house prices. A price fall could in turn lead to a marked reduction in housing construction and thereby affect the real economy.⁵

This commentary aims to give an overview of the need on the housing market based on available historical data on new construction, housing stock and population growth. It also discusses differences between need and demand and how increased construction can affect the situation on the housing market.

Need, demand and housing shortage

When we analyse the housing market and, based on historical data, attempt to estimate how large the housing need is, the concepts of *need* and *demand* for housing and *housing shortage* create confusion, as different meanings have been attached to them.

The need of housing can be seen as the number of homes required for the population to have accommodation of a reasonable standard, regardless of individuals' ability to pay. Demand for housing is a market concept in which the type and number of homes that households wish to have depend on the price. In other words, demand refers not only to the number of homes but also their qualitative properties, such as location and size.

Even if the need of housing has been satisfied within a geographical area, the demand for housing among households may be different from this need. This difference mainly arises if there is an imbalance between the supply and demand for homes of varying sizes and with different forms of tenure or if the homes are mostly situated in areas where there is little demand. In this case, the need is satisfied, but the supply does not correspond to the demand for housing.

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² See Boverket (2017a).

³ Of the country's 290 municipalities, 255 say they have a deficit of homes. Furthermore, 75 per cent of municipalities expect there still to be a deficit in three years' time, see Boverket (2017b).

⁴ See Boverket (2017c).

⁵ Several analysts have identified the high level of construction as a risk, see, for instance, Wallström (2017).

This leads in to the concept of housing shortage. There is no unequivocal definition of housing shortage, but it is possible to put either a market or a political perspective on the concept.⁶ According to the market perspective, a housing shortage arises if people's housing standard is lower than their capacity and desire to pay. In theory, this shortage will be solved as demand drives up housing prices which in turn leads to an increase in supply in the longer term.⁷ From the political perspective, a housing shortage arises if individuals' housing standard is lower than the needs, where the needs may be defined in terms of some political goal and can be, for example, guidelines on housing quality, overcrowding and commuting distance. The most common way of measuring this type of shortage is to relate the size of the population to the number of homes within geographically limited areas. This implies that the number of homes shall not be less than the need of housing.

It is difficult to determine the housing surplus or deficit

A common way of trying to determine the need of housing is to assume that the housing market is in equilibrium for a given year and thereafter compare the number of completed homes with the number of newly established households.⁸ Of course, it is difficult to know whether or when the housing market is in equilibrium in terms of the surplus or deficit of housing being equal to zero, but 1975 can serve as a starting-point as statistics on completed homes are available from that year onwards. If we assume that the housing market was in equilibrium in 1975 and relate the number of completed homes in newly constructed buildings (multi-family and single-family dwellings) to the change in the number of households it is clear that more homes were built than households were established between 1975 and 2006 in the country as a whole.⁹ Since then, the trend has been the reverse (see Figure 1). If the change in both newly constructed homes and households is accumulated, the result is a surplus of housing in the country as a whole (see Figure 2). The result is, however, a consequence of the assumption that the housing market was in equilibrium in 1975. If we instead use 1985 as the base year, the surplus is considerably lower in the country as a whole.

It is therefore difficult to determine whether there currently is a surplus or a deficit of housing in Sweden as the calculations depend on the initial assumption of when the market is in equilibrium. Furthermore, this type of aggregate level calculation implies that a vacant home in Kiruna, for example, compensates for a need of housing in, say, Stockholm. This probably does not reflect households' preferences.

If we instead compare the number of completed homes in newly constructed buildings with the increase in the number of households divided up into the country's various metropolitan regions, we obtain a more reasonable picture of the difference between the number of homes and households, and hence of how large the housing surplus or deficit might be. Figure 3 shows the difference between the accumulated number of homes and households divided up into the three metropolitan regions (Stockholm, Gothenburg and Malmö) and the country as a whole with the assumption that the housing market was in equilibrium in 1975. In the country as a whole, there is a surplus of housing, as established above, while there is a deficit of just over 60,000 homes in the Stockholm region. In the other two metropolitan regions, the need seems more or less to have been satisfied. We also see how the surplus in

⁶ See Bengtsson (1992).

⁷ See Boverket (2012) for an analysis and estimate of the housing shortage from a market perspective.

⁸ In this commentary, a household ratio of 0.5 is used throughout, i.e. a household comprises two persons. This is a slightly higher ratio than in the country as a whole, where an average household comprises 2.2 persons. Furthermore, it is assumed that a household is in need of a home. Neither are the calculations corrected for demolitions and a possible housing reserve to facilitate moving chains.

⁹ There are more detailed data on completed homes in newly constructed buildings compared with data on the housing stock. Historically, between 1991 and 2013, the change in the housing stock (converted) corresponds well to the number of completed homes in newly constructed buildings. Thereafter, there are greater differences due, for example, to the addition of a large number of single-family dwellings to the housing stock, which was not reported previously.

the number of homes has decreased gradually from the beginning of the 1990s apace with population growth and urbanisation. If we instead use 1985 as a starting-point for the analysis, all metropolitan regions show a deficit (see Figure 4). The deficit is greatest in the Stockholm region and is estimated to be about 115,000 homes.¹⁰ Figure 5 shows how the level of the surplus or deficit varies depending on the year that the housing market is assumed to be in equilibrium. It is also clear from the figure that the country as a whole shows a deficit if the housing market is assumed to be in equilibrium in any year after 1990.

Another way of quantifying the need is to use the housing stock as a base. This does not require any assumption about when the housing market is in equilibrium as it is not a question of a flow but of a stock. This method shows that there is actually a housing deficit, of about 200,000 homes, on an aggregate level (see Figure 6). It is clear from the figure that the housing market, based on the housing stock, has historically been characterised by a deficit of housing as the housing stock has been markedly lower than the number of households. However, these calculations overestimate the historical deficit as they are based on current household patterns of, for example, many single-person households, which were not as common in the 1960s.¹¹

In Figure 7, the deficit, calculated from the stock, is broken down by county and it is evident that it is mainly concentrated to counties with the three metropolitan areas. The counties of Stockholm, Västra Götaland (Gothenburg) and Skåne (Malmö) constitute about 85 per cent of the total deficit and these calculations also indicate that the need is greatest in the metropolitan regions.¹²

The calculations above are based on the premise that one household that includes two individuals requires one home. Another way of approaching this question is to relate the number of beds in completed homes to the actual population growth. The number of beds can be seen as a theoretical measure of how great the supply might be if optimal use of newly constructed homes was made. Based on assumptions about how many people live in homes of certain sizes (see Table 1), the number of potential beds can be estimated. We are thus able to take the size dimension into account.¹³ When using 1975 as the base year, the calculations show that there is a large surplus in the country as a whole. There is, however, a shortage in the number of beds in the Stockholm region (see Figure 8). Similar to previous calculations, the levels of the surpluses and deficits vary depending on which year the housing market is assumed to have been in equilibrium, but the overall picture is roughly the same.

This review shows that it is difficult to determine whether there is a surplus or deficit of housing and beds from a needs perspective. The results vary depending on the approach and the assumptions made in each calculation. One clear pattern from the review is, however, that the housing deficit seems to be concentrated but also limited to the metropolitan regions.

Rapid increases in supply bring down prices even when the need is greater than the supply

According to several analysts, there is a housing deficit in Sweden due to too little housing construction over a longer period of time.¹⁴ At the same time, the high level of construction in

¹⁰ Similar calculations have been made for all the country's municipalities and they show that the deficits are almost exclusively in municipalities close to the three metropolitan areas and above all in municipalities around Stockholm. This is the case regardless of whether the base year is 1975 or 1985.

¹¹ Calculations based on the housing stock also overestimate the deficit as there is non-response in the statistics, see Statistics Sweden (2016a).

¹² In these calculations, we could also have used the county-wise household ratios presented by Statistics Sweden. There is, however, a risk with such an approach as high household ratios can be precisely the result of a housing deficit, which in such cases distorts the results.

¹³ This is done similar to Emanuelsson (2015), with the difference being that the calculations are made for metropolitan regions and not for municipalities.

¹⁴ See, for instance, Boverket (2017b), Boverket (2017c) and Sveriges Riksbank (2017).

recent years is considered to increase supply so much that it has caused housing prices to fall at the end of 2017.

It is not inconceivable, however, that a rapid and sharp increase in housing supply, which we are currently experiencing, and particular in the supply of multi-family dwellings, may push down housing prices even though there is a deficit of homes. Essentially, this is a question of the deficit being related to the need of and not to the demand for housing. An increase in supply leads to a lower price. If, on the other hand, the need had been equal to the demand, a greater need would have led to a higher price. In such a situation, an increase in supply would not necessarily have led to lower prices, in the longer term, compared with the starting-point.

If the need of housing is mostly present among economically weaker groups (such as newly arrived migrants, young people and students), an increase in the construction of, for example, expensive rented and tenant-owner homes does not automatically reduce the need, at least not in the short term. The expensive homes under construction must also be in demand in order to avoid a reduced market price. If they are not in demand, the increase in supply will hence lead to a reduced price. Neither does it only have to be prices of newly built homes that fall. Other homes may also be affected depending on how close a substitute they are. Just how much prices will fall depends on when potential home-buyers think that the price is low enough to make the home attractive. A fall in prices will nevertheless sooner or later stimulate movements in the moving chain on the housing market.

In the slightly longer term and regardless of in which segment it emerges, a greater supply of housing should, via price adjustments, stimulate the entire moving chain so that a home is eventually freed up and can satisfy the need. This may take a long time, however. Firstly, it takes time for buyers and sellers to reach an agreement, and secondly, there are structural factors that hinder movements in the moving chain. For example, rent control regulations mean that many individuals never move as they live in cheap homes in attractive locations. Furthermore, the tax system, including capital gains taxation and deferment rules when selling a home, may also affect people's willingness to move. The mortgage cap also hinders movements in the moving chain as people with little capital, but with sufficient incomes, find it more difficult to move from, for example, rented accommodation to a tenant-owned home. These structural factors that exacerbate mobility on the housing market probably mean that an increase in construction can lead to a larger price reduction, at least in the short term.

It is therefore possible to assess which preconditions should be fulfilled to ensure that the type of housing built also corresponds to the type of housing in demand from households, even if there may be considerable uncertainty. It is important that the housing being constructed matches where the demand/need is, the forms of tenure and size of homes requested and households' purchasing ability.

Are we building the right kind of housing in Sweden?

In Sweden, construction has increased substantially in recent years and is particularly focused on the three large metropolitan regions and on counties where other major cities are located. Figure 9 shows the number of housing construction starts in 2016, the average number of construction starts and average number of newly established households over the last three years. It is clear that the increase in construction in recent years has been mostly concentrated to the metropolitan regions, where the largest population growth has also occurred.

In 2016, approximately 42,000 homes were completed, of which about 31,000 were apartments. Of these apartments, around half were tenant-owned and half were rented. In addition, just under 90 per cent of the completed apartments were apartments with 1–3 rooms (see Figure 10). The most common size of apartment in the metropolitan municipalities is one with two rooms, which should be in line with the need of the average two-person household.¹⁵

¹⁵ See Statistics Sweden (2016b).

The housing being built would therefore seem to be in line with the existing need and demand. In 2016, 54 per cent of the apartments in multi-family dwellings were also rented apartments, the highest figure since 2006 (see Figure 11). This should be viewed as positive since not everyone can or wants to buy their home.

The purchasing ability of households is difficult to estimate and there is therefore a risk that the housing being built does not correspond to demand. In times when the price of an asset has been rising for a long time it is common for agents in general, and hence also on the housing market, to be retrospective and to continue to expect prices to rise and thus choose to invest in the asset. Construction companies may also base their investment plans on continued price increases and may thus fail to internalise the risk that prevailing prices may be too high for those who are either looking for or are in need of a home. There is also a risk that many households do not reflect on the price as they too expect prices to continue to rise. It is, however, important that all agents have reasonable expectations of future prices as there is a risk that the supply does not match demand, resulting in a fall in prices. This is particularly important in the current situation, where prices for tenant-owned homes are high, while rents for newly built rented accommodation also tend to be high as a result of high building costs.¹⁶

If housing is built based on a premise that the need is equated with the demand, increases in supply can lead to rapid and sharp price falls. The population growth we have seen in Sweden in recent years is largely due to net migration which in turn has been driven by asylum and close family migration. These people normally have lower purchasing power than the average household and in light of this, a larger number of rented homes need to be built at a lower cost than today.¹⁷

Clearest deficit in the Stockholm region

It is difficult to determine exactly whether, based on a needs perspective, there is a surplus or a deficit of housing and beds as the results vary depending on how the figures are calculated and what assumptions are made. In addition, there are limitations in the data. The results nevertheless indicate that there is a shortage of both homes and beds in the Stockholm region but not in the country as a whole. Indeed, some calculations indicate that there is a major surplus of homes and beds in relation to the number of households and the population growth. In the other two metropolitan regions, the results vary, but the deficit of homes and beds is not as large as in the Stockholm region. While it is difficult to define and estimate the housing shortage, the analysis does suggest that a large share of the housing in Sweden is located in areas where the demand is lower than in the metropolitan regions. This would therefore imply that there is an imbalance between supply and demand, rather than an absolute housing deficit.

The recent increase in construction seems to be relatively well in line with demand. The housing being built is mostly 1–3 room apartments with different forms of tenure in regions that are also experiencing the highest population growth. However, it is difficult to establish whether the housing also matches households' purchasing ability.

¹⁶ The total production cost for a newly built tenant-owned apartment is just over SEK 3.5 million in the country as a whole while the corresponding cost for a rented apartment is just over SEK 1.8 million. The monthly rent in, for example, a newly built, 2-room apartment varies between about SEK 7,000 and SEK 10,000.

¹⁷ Foreign-born persons earned 70 per cent of Swedish-born persons' income in 2015, but the gap decreases the longer they live in Sweden, see Statistics Sweden (2017).

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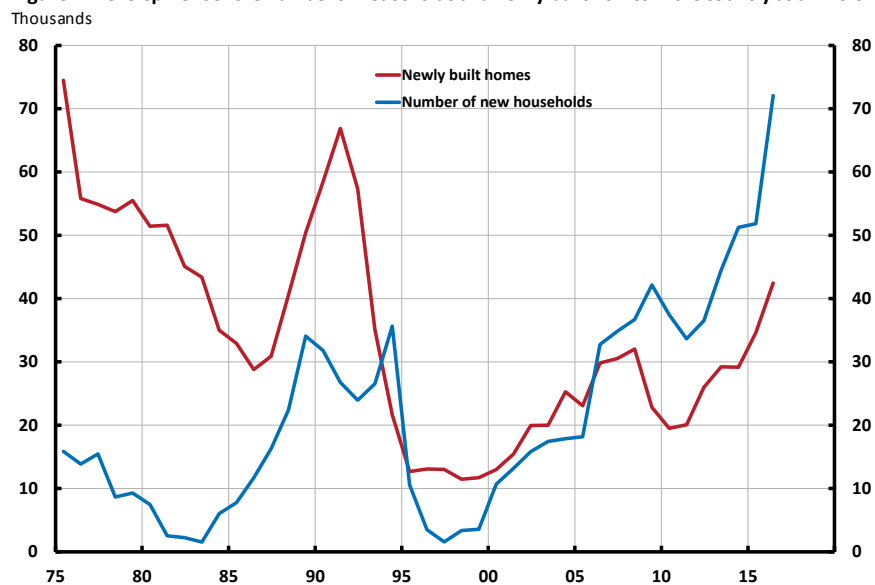
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Figures and tables

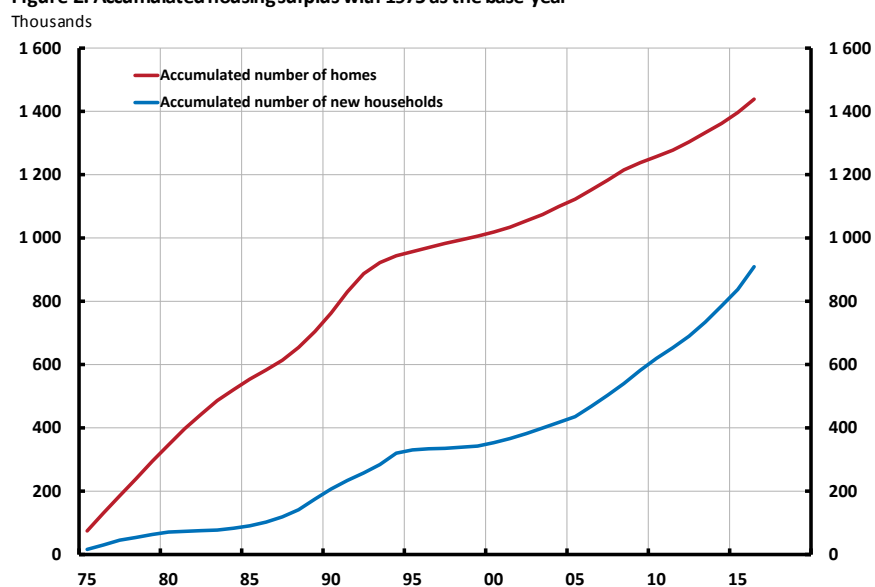
Figure 1. Development of the number of households and newly built homes in the country as a whole



Source: Statistics Sweden

Note. The number of new households is approximated by multiplying the population growth by 0.5, which means that one home per 2 persons is needed.

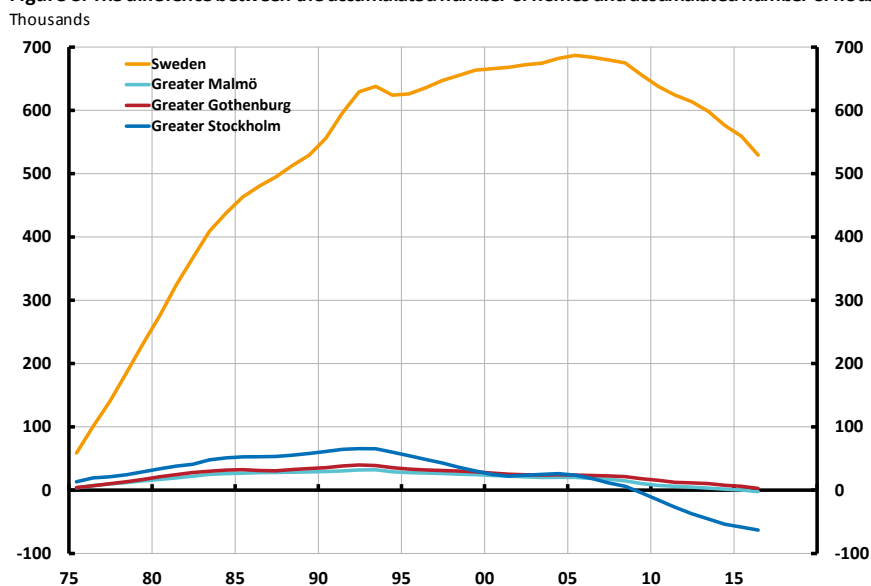
Figure 2. Accumulated housing surplus with 1975 as the base-year



Sources: Statistics Sweden and the Riksbank

Note. The number of new households is approximated by multiplying the population growth by 0.5.

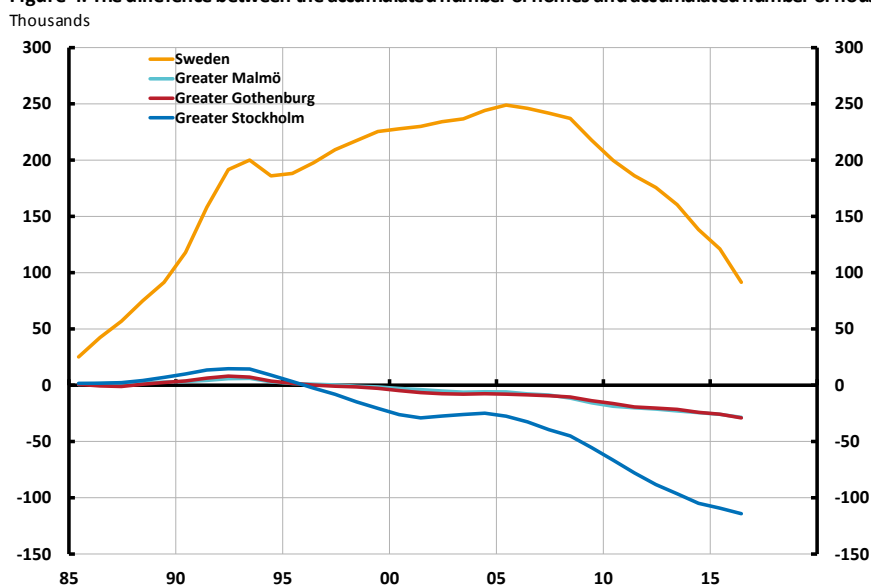
Figure 3. The difference between the accumulated number of homes and accumulated number of households



Sources: Statistics Sweden and the Riksbank

Note. 1975 is assumed to be the year when the housing market was in equilibrium. The calculations are based on the 2005 breakdown of the metropolitan areas.

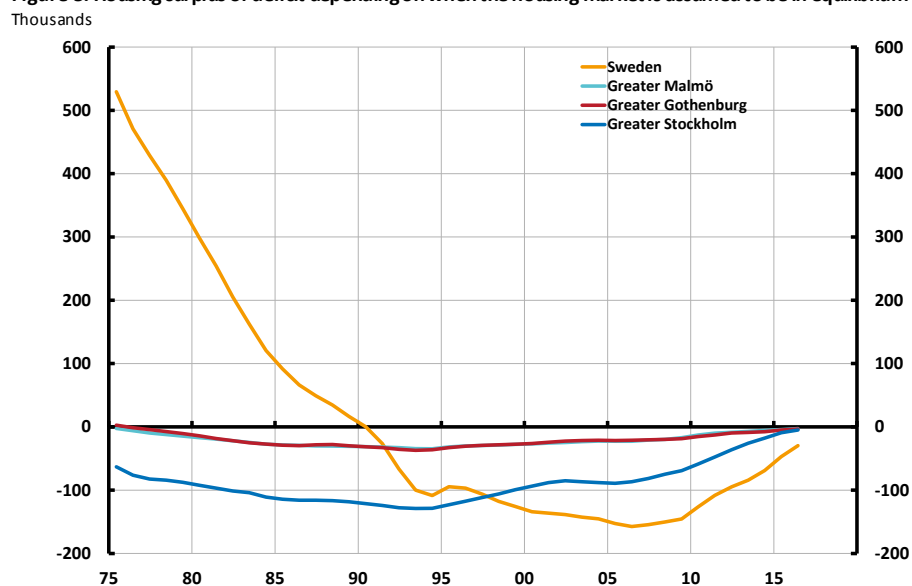
Figure 4. The difference between the accumulated number of homes and accumulated number of households



Sources: Statistics Sweden and the Riksbank

Note. 1985 is assumed to be the year when the housing market was in equilibrium. The calculations are based on the 2005 division into metropolitan regions.

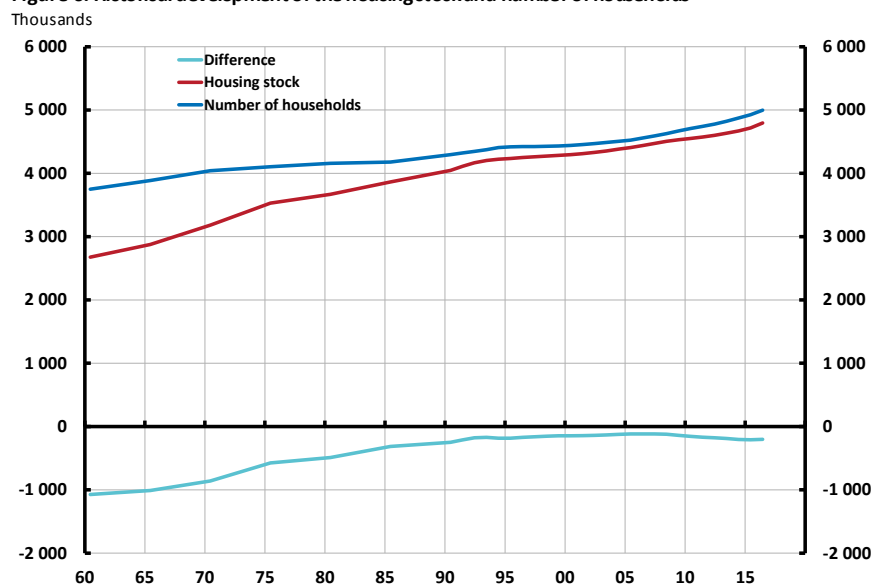
Figure 5. Housing surplus or deficit depending on when the housing market is assumed to be in equilibrium



Sources: Statistics Sweden and the Riksbank

Note. The figure shows the size of the housing surplus or deficit is today as a function of different base-years. The calculations are based on the 2005 division into metropolitan regions.

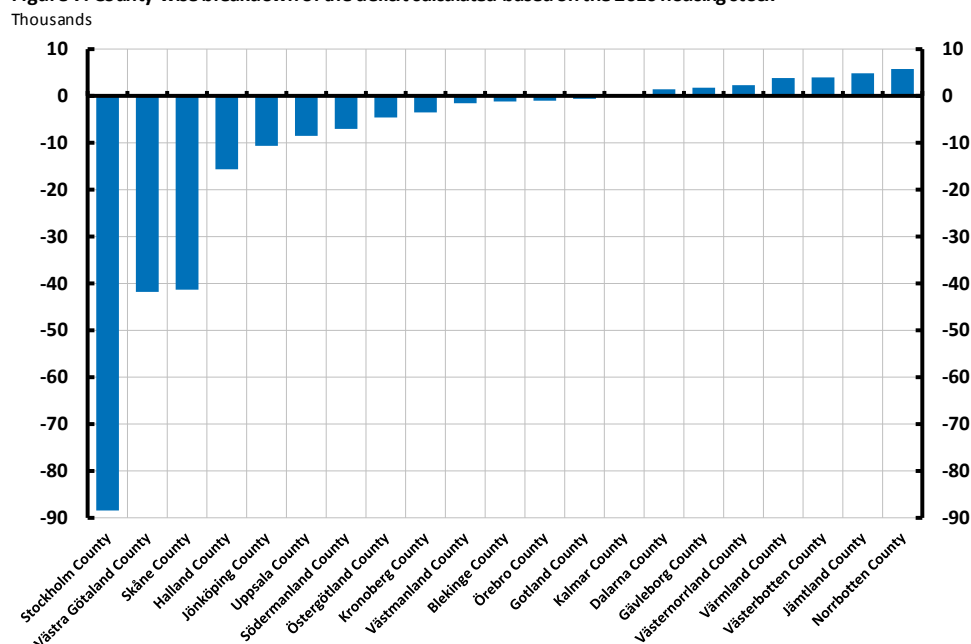
Figure 6. Historical development of the housing stock and number of households



Sources: Statistics Sweden and the Riksbank

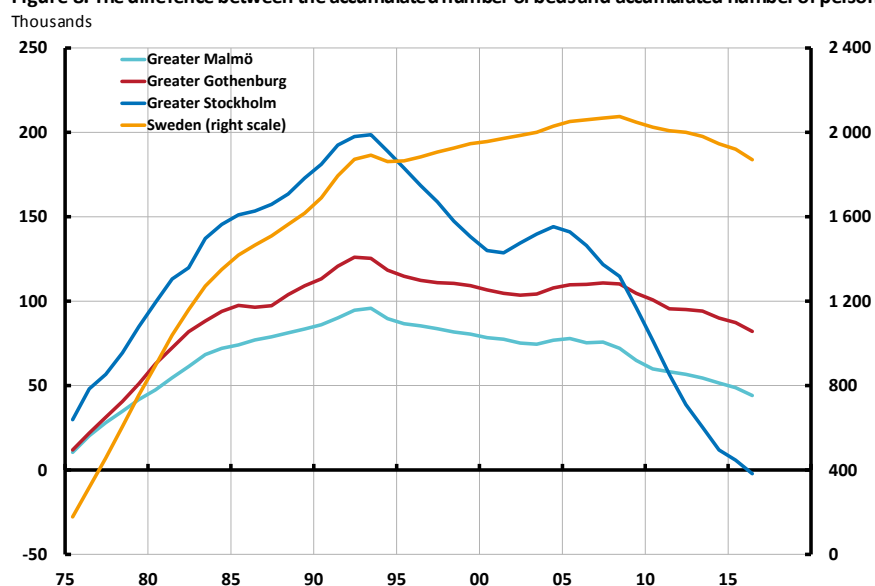
Note. Here, the household ratio is assumed to be 0.5, which is probably an exaggeration as the household ratio was probably lower before when single-person households were not as common. The stock has been recalculated to make the method change in 2013 more comparable over time.

Figure 7. County-wise breakdown of the deficit calculated based on the 2016 housing stock



Sources: Statistics Sweden and the Riksbank

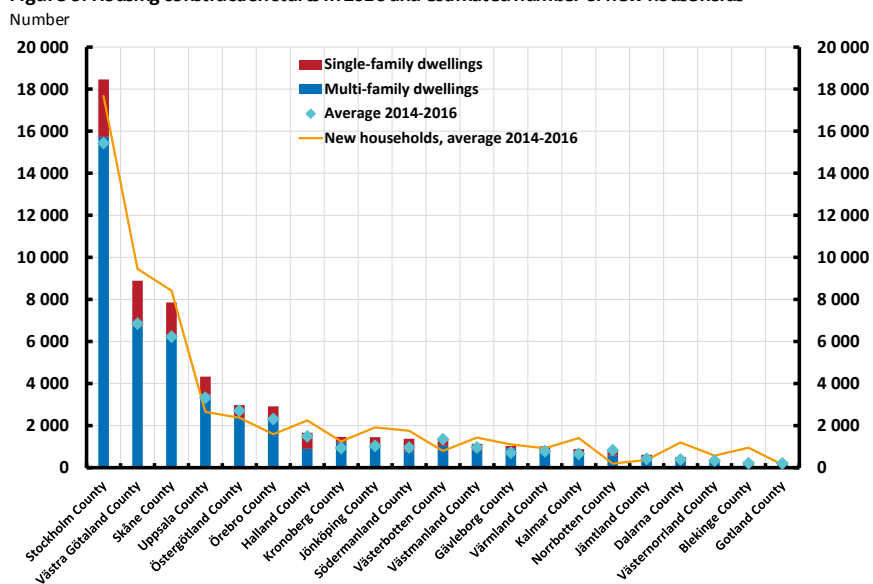
Figure 8. The difference between the accumulated number of beds and accumulated number of persons



Sources: Statistics Sweden and the Riksbank

Note. The number of beds is based on the assumption of how many people live in homes of different sizes. See Table 1 for assumptions regarding the number of persons per home. The housing market is assumed to be in equilibrium in 1975. The Statistics Sweden data on type of home and population growth in different regions have been joined together with data from 1991 according to the 2005 division into metropolitan regions. The older division is used up until 1990.

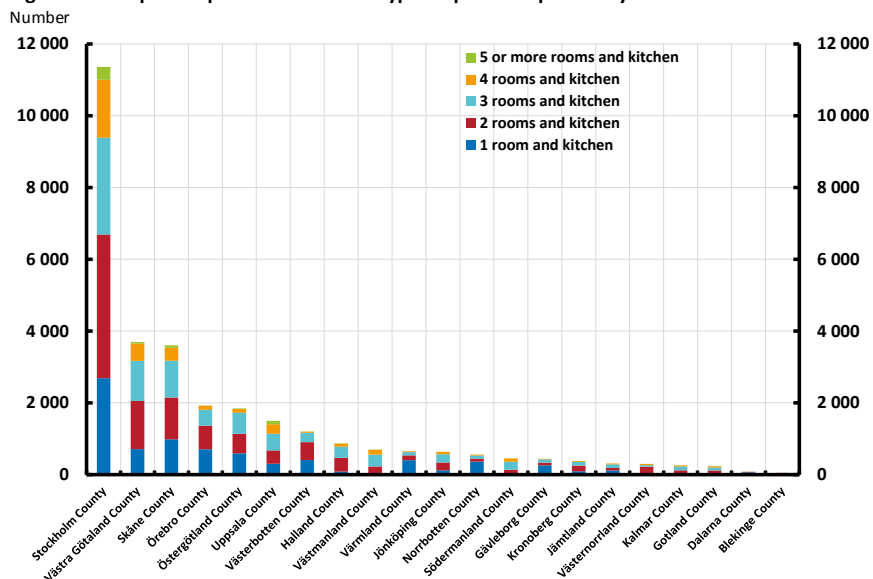
Figure 9. Housing construction starts in 2016 and estimated number of new households



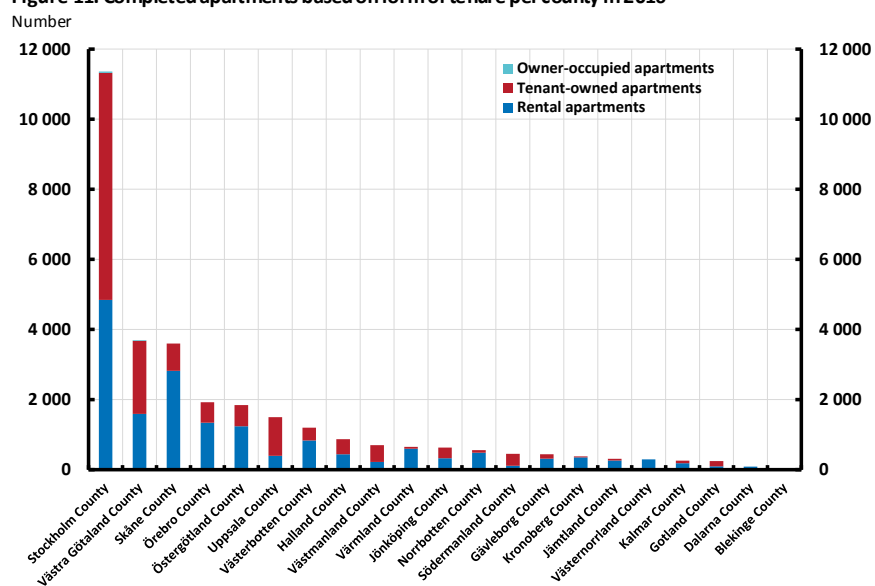
Note. The figures have not been adjusted for the time delay in reporting. Average refers to the sum of multi-family and single-family dwellings, and new households are approximated by multiplying the population growth by 0.5.

Sources: Statistics Sweden and the Riksbank

Figure 10. Completed apartments based on type of apartment per county in 2016



Sources: Statistics Sweden and the Riksbank

Figure 11. Completed apartments based on form of tenure per county in 2016

Source: Statistics Sweden

Table 1. Number of persons in homes of different sizes

Size	Apartment	Single-family dwelling
1 room, 1 room and kitchenette	1	1
1 room and kitchen	1	1
2 or more rooms with or without kitchenette	1	1
2 rooms and kitchen	1.5	1.5
3 room and kitchen	2	2
4 room and kitchen	3	3.5
5 rooms and kitchen	3	3.5
6 rooms and kitchen	3	4
7 or more rooms and kitchen	3	5

Sources: Statistics Sweden and the Riksbank