Analysis

Low interest rates reflected in house prices

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House prices have in the past 10 years risen in the Helsinki Metropolitan Area faster than in the other large Finnish cities. The widening price gap may reflect the increasing attractiveness of the Helsinki Metropolitan Area relative to the other major cities. At the same time, the decline in housing loan interest rates has reduced the user cost of owner-occupied housing. This may also explain why house prices have risen in areas where the supply of housing has not grown correspondingly.

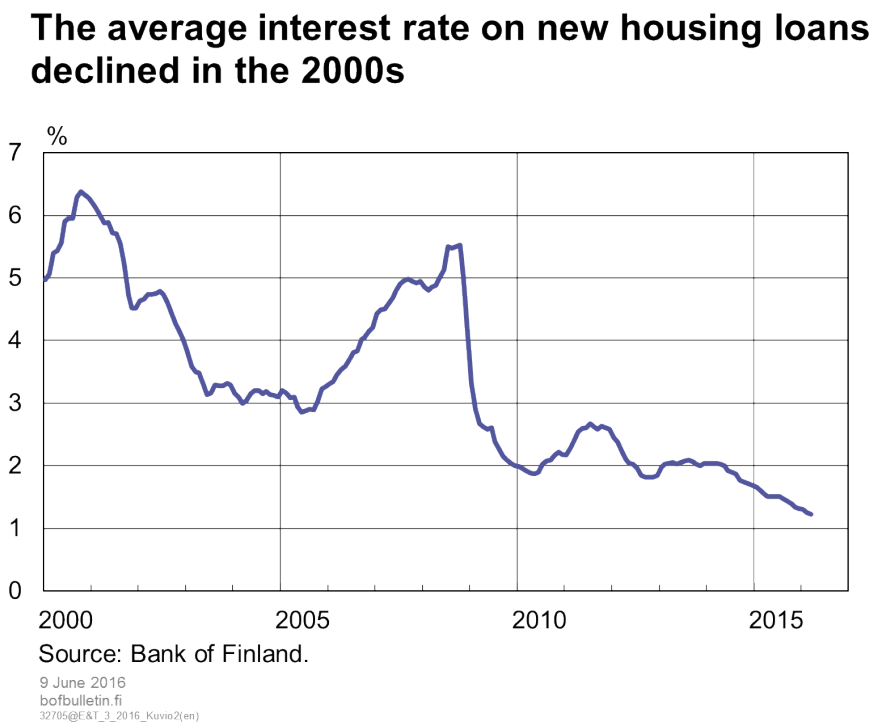


Clear regional differences in price developments

If we examine developments in the prices per square metre of old flats in large Finnish cities in 2005–2015, we find that these prices have risen in nominal terms (Chart 1). An exception to this is the short-term price decline in late 2008. In addition, developments in house prices seem to have levelled off in the past few years.

Price differences as between large cities have increased (Chart 1). Prices in Helsinki, particularly in the downtown area (Helsinki 1), seem to have diverged from prices in other cities.[1]

Chart 1.



Developments in the prices per square metre of old flats reflects a situation wherein the demand for housing in the Helsinki Metropolitan Area and particularly in Helsinki city centre has grown and the supply of housing has not kept up with the developments (Chart 1). In such a situation, growth in demand boosts house prices.

What explains this higher demand for housing in the Helsinki Metropolitan Area?

One possible explanation is that the attractiveness of the Helsinki Metropolitan Area has increased relative to the other large cities, due to e.g. better employment opportunities. If the Helsinki Area has become more attractive, those moving to the area will be prepared to pay a higher price for the opportunity to live there.

If the supply of housing does not increase at a sufficient pace, house prices must rise to stabilise the migration flows between regions. This will then increase the difference in housing costs between the Helsinki Area and the other large cities.

On the other hand, widening regional differences in prices do not necessarily lead to increased regional differences in housing costs. This is due to the fact that user costs of owner-occupied housing depend also on other factors than house prices. Another possible factor behind the

increase in price differences thus relates to the decline in interest rates on housing loans.

The annual user costs of owner-occupied housing will diminish if interest rates fall. If the decline in user costs boosts the demand for housing, then house prices will rise in areas where housing supply is not growing at a corresponding pace. A decline in interest rates is capitalised in house prices, which increases the price spreads between housing markets.

User costs of housing depend on capital costs

User cost of owner-occupied housing refers to the annual costs related to owner-housing. In an owner-occupied flat, the costs include maintenance and management costs but also interest expenses on housing loans and the opportunity cost of the capital invested in the housing. The two latter items are usually referred to as capital costs.

Capital costs also reflect expected house price appreciation. This is due to the fact that an increase in the value of the housing generates a higher return on housing investment relative to the return on alternative investments. In the case of both increases in value and other changes in capital costs, the focus of interest is on the real change in value, and therefore inflation also affects the annual user costs.[2]

If the housing is wholly funded by a housing loan, the capital cost depends entirely on the interest expenses of the housing loan and the expected change in value. However, the purchase of housing is usually funded at least partially with own savings. In such a case, the capital cost also depends on the loss of income due to the capital being invested in one's own housing and not in some alternative asset. In the simplest case, such income losses can be considered as rental income that the homeowner will forego when occupying the house himself.

This also means that the capital cost also depends on the taxation of the return on the owner-occupied housing and on the alternative investment. If the capital income tax is tightened, the return on the capital tied to the owner-occupied housing decreases in the alternative investment, which increases the attractiveness of owner-occupied housing as an investment.

In contrast, repayment of a housing loan is part of a household's savings rather than part of the user cost of housing. The repayment of a housing loan increases the household’s net wealth just as does putting savings e.g. into fund investment. In both the cases, household net wealth (assets minus debt) increases irrespective of future house prices. Repayment of a housing loan reduces the household’s outstanding debt.

Changes in interest rates affect capital costs

A decline in interest rates lowers housing costs, via lower capital costs, assuming a constant level of house prices. As housing investments are usually long-term, the capital cost depends in practice on households' interest rate expectations. Thus changes in interest rates that are perceived as short-term changes do not necessarily have an impact on capital costs.

The effects of changes in interest rates can be illustrated with a hypothetical example of the user costs relating to two similar houses, with respect to housing costs but different with respect to the level of interest rates (Table). In the example, the market prices of the houses are EUR 300,000 and EUR 400,000. The difference in prices is due to the fact that one house is located closer to the centre or in an otherwise more attractive area. In addition to the capital costs, the user costs include a maintenance charge which, for the sake of simplicity, is assumed to be EUR 4,800 per annum for both houses.

In contrast to maintenance costs, the capital cost depends directly on the value of the house. The capital cost can thus differ across housing markets, even if the expected changes in the value of the house are not taken into account.

The rate of return on the alternative investment is assumed to correspond with the interest rate on housing loans. This assumption simplifies the calculations, as it obviates the need to consider the portion of the housing that is financed by the owner's own capital.

Table.

A decline in interest rates reduces the capital costs for owner-occupants (excl. expected changes in value)

User cost = maintenance charge + capital cost				
		Interest rate, %		
Value of housing, EUR		**5**	**3**	**1**
400,000	Capital cost	20,000	12,000	4,000
	Maintenance charge	4,800	4,800	4,800
	Total	**24,800**	**16,800**	**8,800**
300,000	Capital cost	15,000	9,000	3,000

Source: Bank of Finland.

A decline in interest rates reduces the capital costs for owner-occupants (excl. expected changes in value)				
	Maintenance charge	4,800	4,800	4,800
	Total	**19,800**	**13,800**	**7,800**

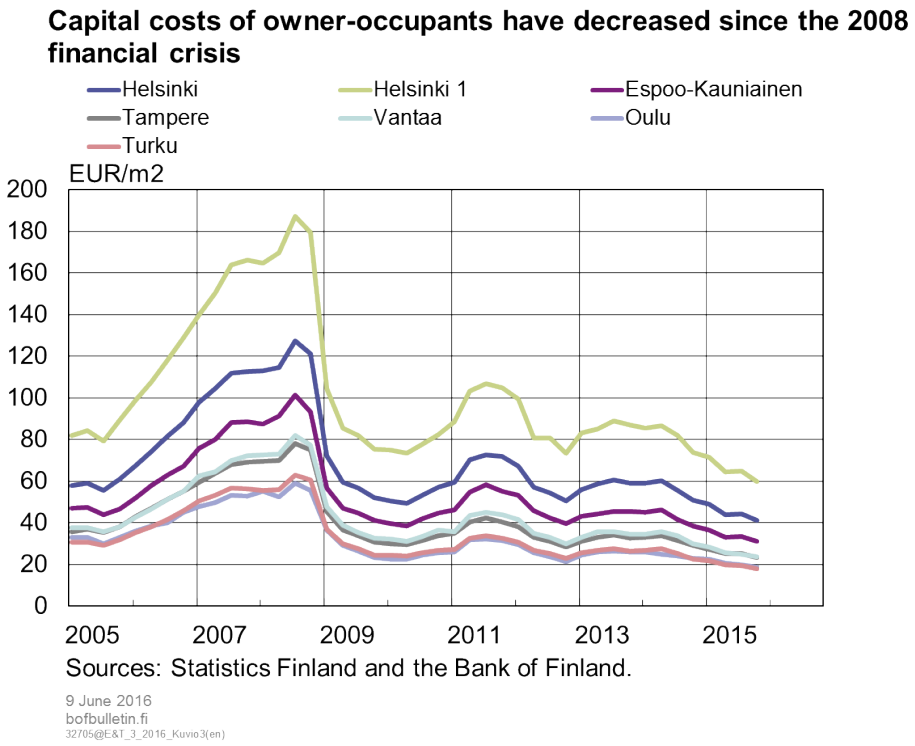
Source: Bank of Finland.

If the interest rate declines from 5% to 1%, the user costs for both the owners decrease. And the difference between user costs diminishes. If the interest rate is 5%, the annual capital cost for the owner of the more expensive house is EUR 5,000 higher than for the cheaper house, whereas if the interest rate is 1%, it is only EUR 1,000 higher.

Such a decline in interest rates was experienced in the Finnish housing markets earlier in the 2000s. With the exception of 2006–2008, the average interest rate on new housing loans has been decreasing (Chart 2).

The above interest rates are nominal (Chart 2). In principle, the capital cost depends more on the real interest rate, which is calculated by deducting the overall inflation rate from the nominal interest rate. However, taking into account the rate of inflation would not change the picture substantially. In the longer term, real interest rates have declined more or less in line with nominal interest rates.

Chart 2.



If the supply of housing is highly elastic, changes in demand are less reflected in house prices and changes in interest rates need not impact the long-term behaviour of house prices. If this is the case, a contraction in the user costs due to a decline in interest rates enables households to spend a larger share of their disposable incomes on other consumption and to consume more housing services than before, e.g. by buying a larger home.

On the other hand, this also increases the pressure for loans with longer maturities and interest-only loans. For example, if the interest rate is 1%, for a EUR 400,000 housing unit, the annual capital cost is EUR 4,000. Even if a middle-income household is prepared to pay such an annual capital cost on owner-occupied housing, it may not be willing to cut spending enough to have a debt-free home e.g. in 20 years' time.[3]

User costs have not risen as fast as house prices

As the capital cost, in particular, depends on the value of the housing unit and thus its location, an analysis of changes in capital costs provides a rough estimate of developments in the regional differences in user costs of owner housing (Chart 3).[4] The calculation accounts for interest expenses on the housing loan and the return on the alternative investment, but not the expected change in value.

Capital cost is typically measured as a percentage of the value of a housing unit, but the following analysis is of the costs per square metre because the aim is to provide a picture of developments in capital cost differences as between the Helsinki Metropolitan Area and the other large cities.

The analysis shows that as a result of the decline in interest rates, the capital cost per square metre for owner-occupants has decreased also in Helsinki, despite the rise in house prices. In other words, the user costs of housing do not appear to have risen in Helsinki more than in other parts of the country.

Chart 3.



Looking at recent-years developments in house prices in large cities relative to changes in interest rates, it thus does not seem that the user costs of housing have risen as fast as house prices. A decrease in the capital cost of owner-occupied housing thus indicates that the regional differences in prices in recent years may be at least partly explained by the decline in interest rates on housing loans.

In any case, the housing stock adjusts slowly to changes in demand, so that these changes will be reflected in housing prices in the short term. In the longer term, higher demand for housing also shows up in the supply of housing, due to the rise in prices. If the housing stock grows in areas where prices are high, the regional differences in prices should decrease. If the price differences

across cities do not level off even in the longer term, the differences must be due to factors constraining the growth of the housing stock.

Land use regulation reduces the supply of housing

A number of factors may restrict the growth in housing stock. These include the lack of competition in construction, construction costs, geographical constraints, and the regulation of construction and land use.

Some of the regulations and constraints on construction are national, but the majority of decisions on the constraints and regulations on land use are taken at the local level. A key objective of regulation is to correct externalities related to construction, which may be either positive or negative. Measuring these externalities can be difficult, but decision-making regarding the degree of regulation requires taking into account the trade-off between the benefits of regulation and costs imposed by fewer houses in places where people would like to live.

Land use regulation may have three types of impacts:

1. Regulation affects the value of the lot to which it applies. The purpose of regulation is to restrict the use of the lot. If the restriction is binding, the owner may have to carry out the construction differently than was originally planned. This reduces the value of the lot.
2. Regulation on how to build on a particular lot has an impact on neighbouring lots, which may either improve or reduce the attractiveness of the neighbouring lots. For example, building an extra floor may cast a shadow on the neighbours' garden and thus cause them some inconvenience. On the other hand, if the lots are built on more densely, this will bring more residents to the area, create demand for services and thus for new services, which will also benefit the current residents.
3. Regulation of construction may lead to a situation where a smaller portion of lots are built on, or in the case of lots which already have buildings, the owners may build less than would have been the case without the regulation.

All these impacts are reflected in house prices. Land use regulation and constraints on construction may lead to a lower supply of housing and an increase in the attractiveness of a housing area relative to a situation with no constraints on land use. Both of these effects can be expected to result in higher housing prices compared to a situation where there are no constraints on construction.

It is difficult to separate the impact of regulation from other factors that affect housing supply and prices. There is however clear evidence that construction-related constraints reduce housing supply price elasticity, boost housing prices, and increase the volatility of housing prices. The magnitude of these impacts depend on the stringency and scope of regulation.[5]

Regulatory constraints on housing supply impose costs on society

Due to regulation, productive cities grow too slowly. The costs related to regulation can be direct welfare costs that result from households not being able to live where they want to live. Costs may also arise because agglomeration effects – probably the most significant benefits of urbanisation – are not fully achieved. For example, US estimates show that the costs of regulation have significantly reduced GDP growth relative to an alternative scenario with no constraints on construction.[6]

The aggregate effects of local productivity changes also depend on the severity of land use regulation.[7] Local productivity growth increases earnings and boosts the demand for housing. If housing supply is elastic, employment improves and earnings rise, possibly without a significant rise in housing costs. If, on the other hand, housing supply is inelastic, local productivity growth does not lead to an increase in employment but is rather capitalised in housing prices.

These regulatory costs are related to the fact that the volume of housing construction is too low in areas where households would like to acquire housing. They are largely independent of developments in interest rates. That is, a decline in interest rates does not, at least directly, affect these costs.

In contrast, the costs of regulation via house price levels and volatility, are not independent of interest rate developments. Constraints on construction amplify house price volatility particularly if households expect that the housing supply will be inelastic also in the future. If a low level of interest rates boosts the demand for housing and pushes up house prices in areas where supply is inelastic, it may amplify the price volatility related to regulation.[8]

Fluctuations in house prices adversely impact households. Large swings in prices increase the riskiness of housing investment and reduce households' welfare. In addition, they lead to wider and more random redistribution of wealth between homeowners and those considering home purchase.

High house prices and house price volatility may also relate to macroeconomic risks. For example, as interest rates fall, the user costs of owner-occupied housing do not rise as fast as house prices. The low level of interest rates, along with supply constraints, may therefore lead to a strong growth in households' debt-to-disposable income ratio as the level of house prices rises.[9]

In Finland, as in many other countries, increasing attention has been paid to these risks, and

authorities have introduced macroprudential tools for containing them.[10] Thus far, however, we do not have extensive international experience or empirical evidence on the impacts of these tools.

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Notes

1. Helsinki 1 comprises the following areas: Helsinki city centre, Kaartinkaupunki, Kaivopuisto, Eira, Katajanokka, Kruununhaka and Ruoholahti. ↑
2. Calculations of the user cost of owner-occupied housing include also risk premia, which indicates that the assets invested in housing are poorly diversified. Taxation also has an impact on the user cost, due to deductible housing-loan interest payments as well as capital income and capital gains taxation. See e.g. Diaz – Luengo-Prado (2008) ja Himmelberg et al. (2005). In Finland, user cost calculations have been conducted by e.g. Lyytikäinen and Lönnqvist (2005). ↑
3. The trend in prices may also reflect the longer housing loan maturities. E.g. Dam et al. (2014) examined regional price differences in Denmark as well as the impact of the level of interest rates and longer maturities on house prices. ↑
4. The capital cost per square metre is calculated by multiplying the average price per square metre of old flats (Chart 1) by the average interest rate on new housing loans (Chart 2). The calculation takes account of capital income tax, but not that the deductibility of housing-loan interest payments has been gradually restricted since 2012. Due to restrictions on the deductibility of housing-loan interest payments, the user costs of households with housing loan grows, but the changes depend on the size of the housing loan. The calculation does not include inflation or expected changes in house prices. Because the calculation is based on prices per square metre and not on house prices, it does not either take into account changes in floorarea per person. ↑
5. See e.g. Paciorek (2013), Turner et al. (2014) and Hilber – Vermeulen (2016). For Finnish reviews on literature, see e.g. Cheshire (2012) and Schauman (2014). ↑
6. Hsieh – Moretti (2015). ↑
7. Hilber and Vermeulen (2016) have analysed the impact of land use regulation in the United Kingdom. ↑
8. See e.g. Glaeser et al. (2008). ↑
9. Developments in household debt and disposable income in Finland has been analysed by e.g. Putkuri (2016). ↑
10. See e.g. Hartmann (2015). In Finland, the gradual restriction of the deductibility of housing- ↑

loan interest payments, introduced in 2012, works in the similar manner as some macroprudential measures.

Keywords

housing loans, housing markets, prices