

The Copenhagen housing market

The current status and risks

Published 1 March 2018

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The price level has reached the high side and risks for a decline in prices the coming years – even in the case of no price bubble

Conclusions

- In general we do not see any signs of a national price bubble on the housing market in Denmark. The housing burden compared to disposable income is very low in a historical perspective and credit growth remains very moderate.
- However there is no doubt that housing prices in Copenhagen – especially in the Copenhagen market for apartments – has reached a high level. Prices have been running fast over the past years and we have seen a high credit growth in Copenhagen of around 10 % annually. The owner occupied housing market in Copenhagen – both houses and apartments – makes up around 7 % of total owner occupied housing stock in Denmark.
- As always it is impossible to draw any firm conclusions on the existence of price bubbles. Many economic factors are contributing to the higher prices in the housing market in Copenhagen. On the other side the apartment market in Copenhagen looks a little expensive assessed from both a macroeconomic perspective and from comparing wages and incomes to income requirements when buying owner occupied housing.
- Even though there are some warning signals from the housing market in Copenhagen, it is worth noticing that the market does look a lot healthier than it did in 2006/2007. The housing burden on both apartments and houses are much less stressed now and even though credit growth is high, it was much higher back then.
- In reality the bubble discussion itself is not that interesting with our eyes. Housing prices can fluctuate widely even without a price bubble.
- We see several risks in the Copenhagen housing market over the coming years.
 - The biggest risk is future increases in interest rates. The very low interest rates have undoubtedly been priced in and the price effect can be reversed if and when interest rates goes up.
 - The new housing tax reform is expected to have a negative impact on the apartment market. From 2021 housing taxes on apartments will go up and the biggest price effects will be seen in the Copenhagen market, especially on relatively expensive apartments. All things being equal the new tax reform means 5-10 % lower prices.
 - Construction activity is very high in Copenhagen and is expected to remain high in the coming years. An increase in supply will have a dampening effect on the market
 - Risk of new financial regulation which is always difficult to fine tune to market. Furthermore we may underestimate the market effect of the latest regulation in form of “new restrictions on households with high debt”
 - Finally housing optimism is at a high level and the majority of the Danes expects future price increases – both at a national level and in Copenhagen. Housing optimism is typically a reflection of the actual price development, but changes in expectations will have an impact on the market and reinforce price fluctuations. We have witnessed such an effect in the Swedish housing market recently where high optimism has been turned to pessimism. This has contributed to the decline in prices.
- Housing prices in Oslo and Stockholm have dropped around 10 % from the peak. An often heard question at the moment is: Could Copenhagen be the next Oslo or Stockholm in regards to a sharp decline in prices despite low interest rates and an economic upswing? The most important difference between Copenhagen and Oslo/Stockholm is that price increases in Copenhagen has been smaller. This reduces the risk for a correction in prices without changes to underlying fundamental factors. Furthermore credit tightening for buyers of owner occupied housing has been looser in Copenhagen compared with Oslo. It is still too early to call a turn on the housing market in Oslo and Stockholm but it is worth noticing that prices actually increased a bit in January 2018.

Housing market in good shape but worries about local excessive price increases

Prices on apartments in Copenhagen are still running with yearly increases close to 10 %

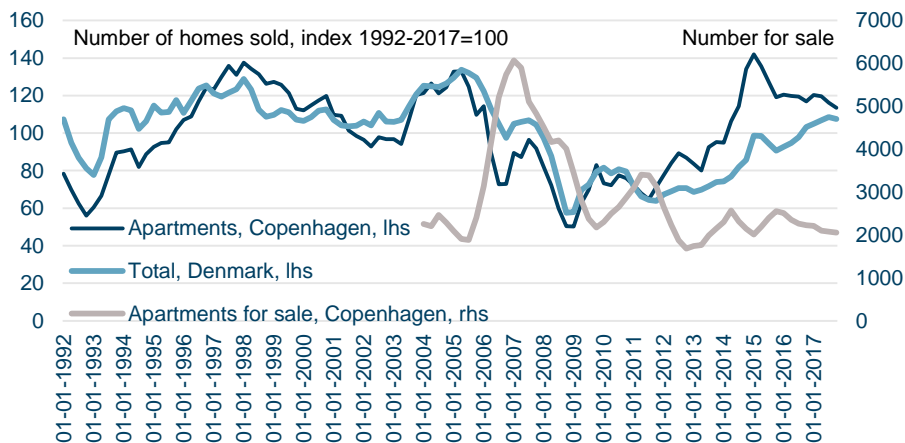
The current market situation

House prices in Denmark have risen around 4 % in 2017 while prices on apartments in Copenhagen increased by 10,5 %. This was the third year in a row with price increases close to 10 %. Since the end of 2011 prices on apartments in Copenhagen have risen by 80 % while house prices in Denmark have increased by 20 %.

Monthly price increases on Copenhagen apartments have slowed down a bit in the last two months of 2017 and in January 2018. We have also seen slightly lower sales activity - perhaps due to the discussions of new restrictions on loan choices for households with high debt. However it is yet too soon to conclude that we are approaching a soft landing in the Copenhagen market.

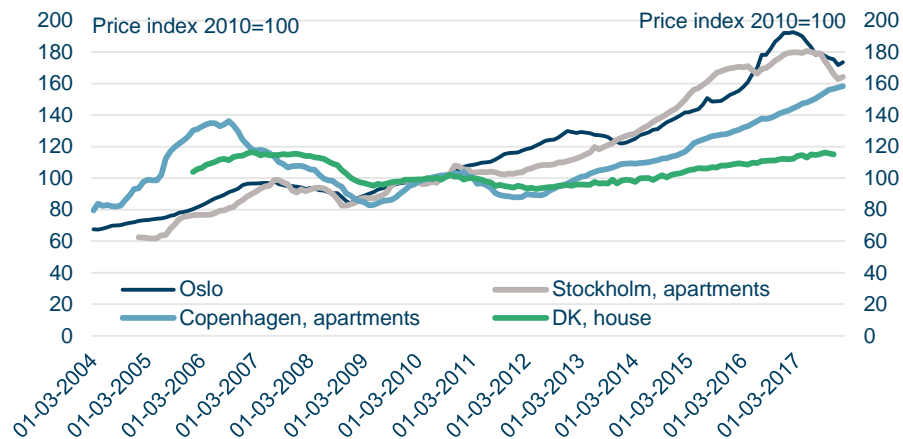
We have earlier seen short-lived price fluctuations and then a move back to earlier price trend. Furthermore we still have a high activity level on apartments in Copenhagen in a historical perspective as well as a high level of displays of homes. This is normally a good indicator of future sales. Finally we see a low supply of apartments for sale in Copenhagen.

Sales activity above historical average at the moment



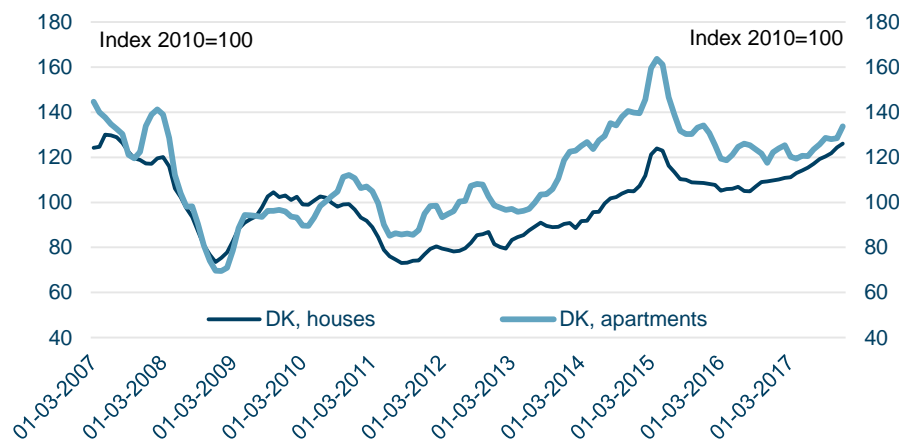
Source: Finans Danmark, Statistics Denmark, boligsiden.dk and Realkredit Danmark

Still very high growth in prices on apartments in Copenhagen



Source: Macrobond, boligsiden.dk and Realkredit Danmark

High level of displays of homes at the moment



Source: home and Danske Bank

Are the large price increases in Copenhagen explainable?

Many factors have contributed to the price increases...

The important explanations for the big price increases in Copenhagen

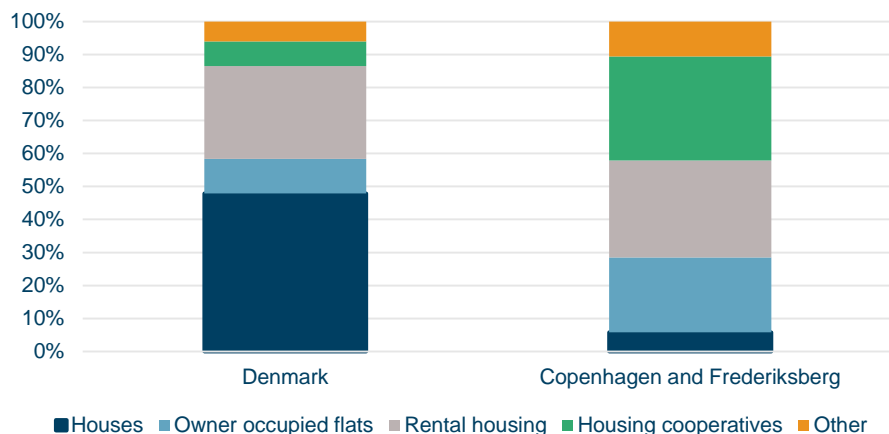
There are many contributors to the upswing in prices in the Copenhagen housing market, and the most important contributor is the historic low level of interest rates. The housing market in Copenhagen is very price sensitive to changes in interest rates. This is due to a higher price level, an often higher debt factor when buying a home and a relatively low stock of owner occupied housing.

Under 30 % of housing stock in Copenhagen and Frederiksberg is owner occupied compared to around 60 % for Denmark. Prices will therefore fluctuate more in Copenhagen if underlying demand changes. Prices and rents are much more sticky on housing cooperatives and rental housing. They make up 60 % of the housing stock in Copenhagen and Frederiksberg.

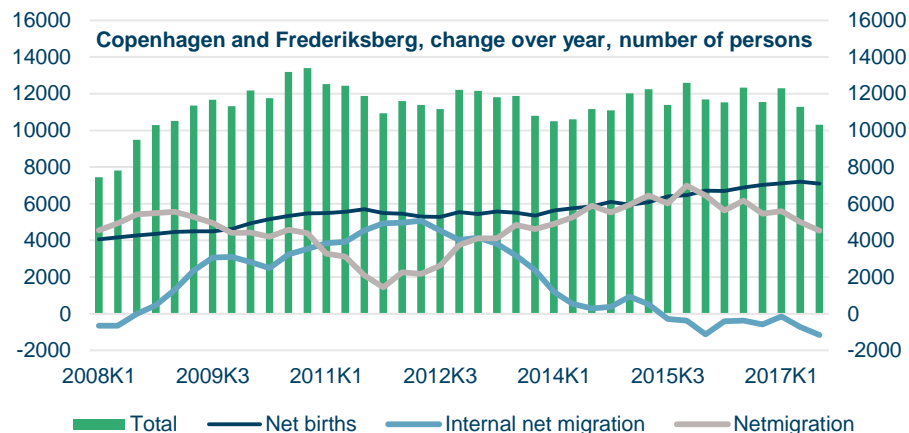
Demographics also support house prices in Copenhagen. Since the end of 2008 population has risen around 10.000-12.000 inhabitants each year. Internal net migration have been negative the last couple of years but net migration from abroad and net births are driving the increase in population.

Finally employment and income growth rates have been highest in Copenhagen.

Relatively few owner-occupied housing in Copenhagen and Frederiksberg

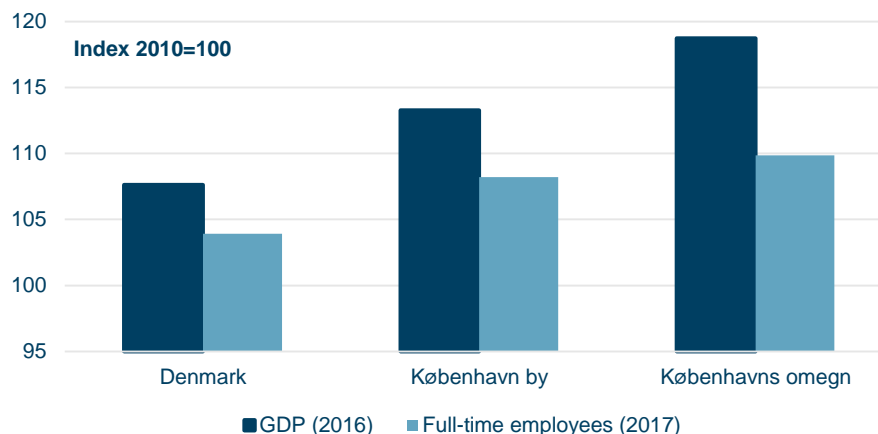


Rising population in Copenhagen and Frederiksberg



Source: Statistics Denmark and Realkredit Danmark

Copenhagen has been the biggest growth engine in recent years



Source: Statistics Denmark and Realkredit Danmark

Are the large price increases in Copenhagen explainable?

...but the price on apartments in Copenhagen has reached the expensive level

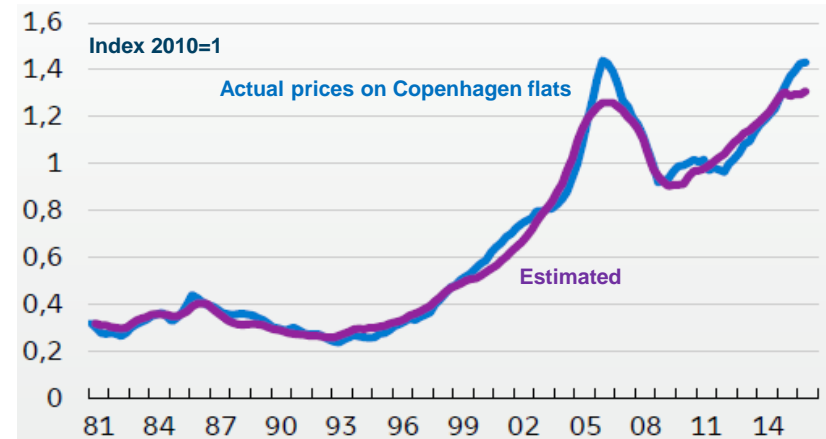
Different approaches tell the same story – high price level in Copenhagen

Throughout the last couple of years there have been much debate on whether we have a price bubble in Copenhagen or not. Unfortunately economists do not have the right tools to give a clear conclusion. A lot of econometric models can be designed on the back of economic theory but caution is advised as different conclusions can be reached. In late 2016 the Danish Central Bank estimated a model on the prices on Copenhagen flats. They could explain a large part of the price increases but actual prices were 8 % higher than their estimate. This difference has most likely grown a bit due to price increases of another 10 % on Copenhagen apartments in 2017.

Realkredit Danmark's own calculations on the housing burden also shows that despite record low interest rates the apartment market in Copenhagen is to the expensive side in a historical context. However the housing burden are still a lot lower than in 2006/2007. The housing burden on houses in Greater Copenhagen are around the historical average while the housing burden are close to historical lows in Denmark.

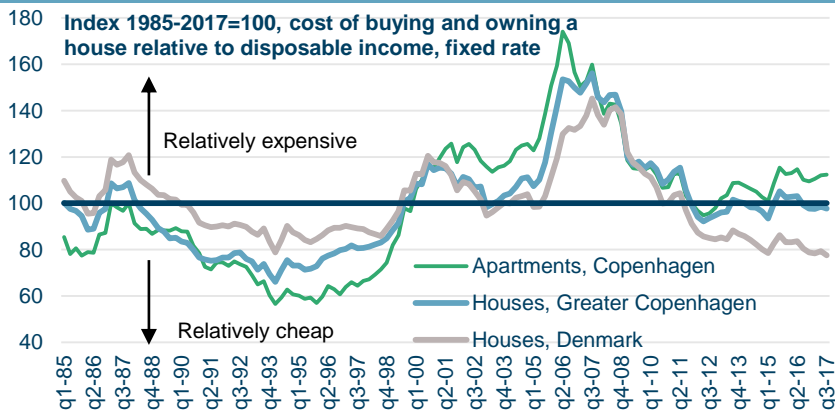
House price bubbles normally coincides with high credit growth. RD's yearly growth in mortgage lending to Copenhagen and Frederiksberg have stabilised close to 10 % since 2016H2. It is a high and not sustainable growth rate but still lower than in 2004-2006. Back then we saw yearly growth rates of around 15-25 %. Credit growth is very modest outside Copenhagen.

The Danish Central Bank: Prices are a little higher than can be explained



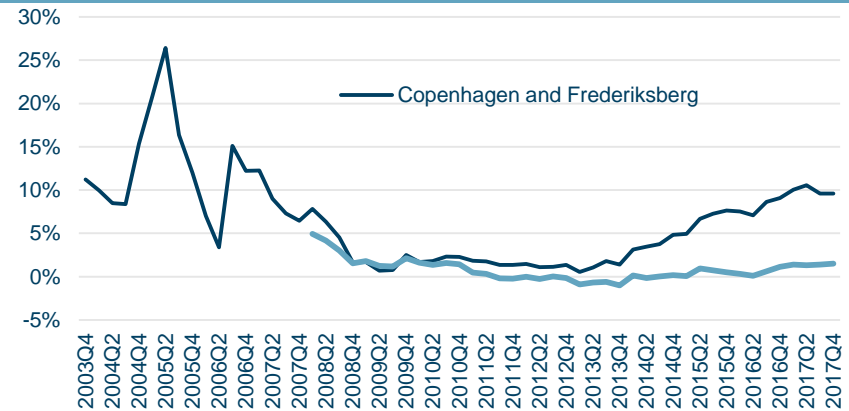
Source: The Danish Central Bank, Kvartalsoversigt 4. kvartal 2016

Housing burden on apartments in Copenhagen to the expensive side



Source: Statistics Denmark, The Danish Ministry of Taxation, Finans Danmark and Realkredit Danmark
Note: Prices on apartments in Copenhagen has been approximated by using national data on apartments from 1985-1991

Growth in mortgage lending, volume, private, RD (percent y/y)



Source: Realkredit Danmark

It can be difficult to access the housing market in Copenhagen without proper savings

Income requirements for home purchase versus wages for typical home buyers and owners

The housing market in Copenhagen – is it affordable for people with middle incomes?

A different approach to evaluate the current price level in Copenhagen is to look at income levels and income requirement, when buying owner occupied housing. This approach is also indicative – like the former macro approach – due to lack of transparency in salary supplements and differences in savings, consumer habits, family sizes, preference for housing type etc.

In the table below we have made calculations for “Income requirement” for different family types based on a 5 % initial pay-out, fixed interest rate with repayments and compliant with Danske Banks recommended “air” in the budget after fixed expenses. Housing prices are calculated on the basis of the average price per square meter from official price statistics. The numbers for income requirement are then compared to wages for newly educated and for people with 5 to 10 years of working experience. It shows that it is difficult for people working in the public sector to get a foothold on the Copenhagen housing market and it is even more difficult if they want to size up later on – unless they have achieved a value increase on existing homes.

Academics in general working in the private sector are not excluded from the market and the average income of existing homeowners – according to data from Statistics Denmark – does not look problematic. The average income per adult for existing homeowners – living as a couple with children – is around 47.000 per month before tax and pension and public transferring included. If a couple with two children wants to buy an average house in Copenhagen the income requirement is “only” close to 41.000 kroner pr. month.

	Income per month before tax and exclusive pension	Income per month before tax. Pension and public transferring included
"Income requirement" per adult, couple without car, apartment 80 sqm in Copenhagen	24.219	
Nurse, newly educated and with shifts included	27.096	
Police officer, newly educated	28.343	
Academics, newly educated, public sector	28.376	
Teacher, newly educated	30.675	
"Income requirement" per adult, couple with 1 child and car, apartment 80 sqm in Copenhagen	31.365	
Police officer, 10 year of experience	31.997	
"Income requirement", single and no car, apartment 60 sqm in Copenhagen	33.959	
Academics, 5 years of experience, public sector	34.329	
Teacher, 5 years of experience	34.608	
Nurse, 10 years of experience and with shifts included	35.486	
"Income requirement" per adult, couple with 1 child and car, apartment 100 sqm in Copenhagen	35.562	
Income per adult, homeowner in Copenhagen, couple without children		36.593
Academics, newly educated, private sector	37.500	
"Income requirement" per adult, couple with 2 children and car, house 140 sqm in Copenhagen	40.714	
Income per adult, homeowner in Copenhagen, single		41.865
Income per adult, homeowner in Copenhagen, couple with children		47.026

Would we be able to buy our own homes – or are we dependent on housing equity?

Too much dependency on housing equity can be seen as a warning sign for housing prices in Copenhagen

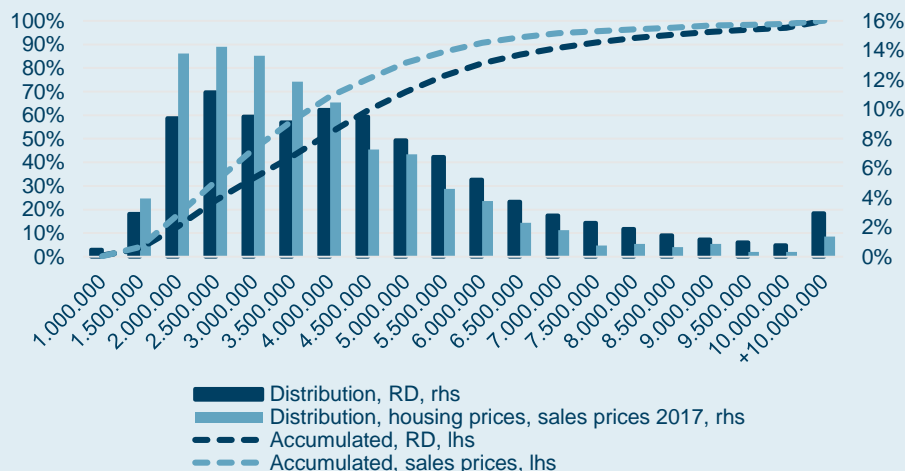
Distribution of housing prices and incomes

Are the high housing prices in Copenhagen based primarily on incomes or are there a large degree of dependency on housing equity when climbing the property ladder? To answer this question we have looked into the distribution of housing prices in Copenhagen and Frederiksberg and compared them to the income of families living in these areas. According to our own property valuation model the typical price of a home is around 2-5 million DKK and approximately 80 % of owner occupied housing have a value of 6 million DKK or less. Our valuation model is overall confirmed when looking at actual sales prices from apartments and houses in Copenhagen and Frederiksberg in 2017 - al though sales prices are a bit lower on a general scale.

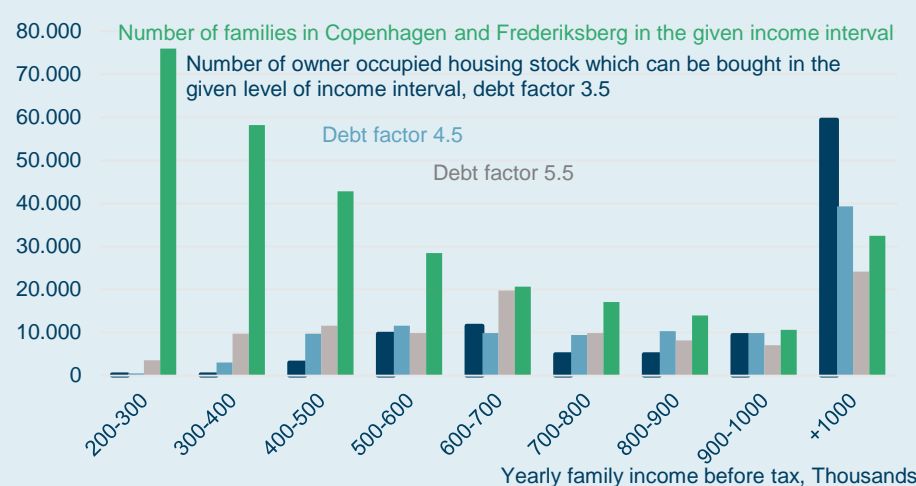
We can “translate” the distribution of housing prices to a required income level for a household buying a home by subtracting a 5 % initial pay out from the housing value and using different debt factors to proximate a given income level. This is done in the figure below and compared with family income levels before tax. By using a “conservative” debt factor of 3.5 we can see that in the most expensive part of the market we generally do not have enough buyers. When family incomes crosses 1 million DKK before tax we have a larger supply of houses than potential buyers – around 25 % of the housing stock. This roughly corresponds to housing prices of 4 million DKK and above. If we use a debt factor of 4.5, the oversupply shrinks to close to 7 % and the issue with oversupply will be seen with a price level of above 5 million DKK. In recent years we have also seen debt factors around levels of 5.5 and with such high levels we have enough buyers with proper income to buy the owner occupied housing stock.

The general picture is that with “normal” debt factors around 3.5-4.5, income levels are not enough to buy the housing stock in Copenhagen without housing equity. This illustrates that the price levels are generally high, but it is not enough to call for a large imbalance in prices. Firstly the “oversupply” is rather small with debt factor 4.5 and secondly there have always been some housing equity or savings in the market. We have made the same calculations for 2011 – before the turn in prices in Copenhagen. At that time there was no “oversupply” with a debt factor of 3.5. This illustrates that prices have risen a lot more than incomes through recent years.

Distribution of housing prices – apartments and houses – in Copenhagen and Frederiksberg



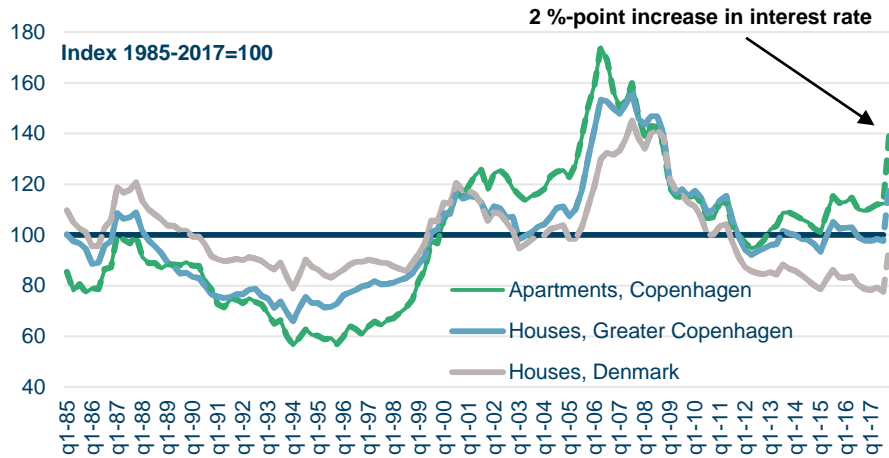
Incomes and supply of housing for a given income and debt factor



No price bubble does not mean no risks to the Copenhagen market the coming years

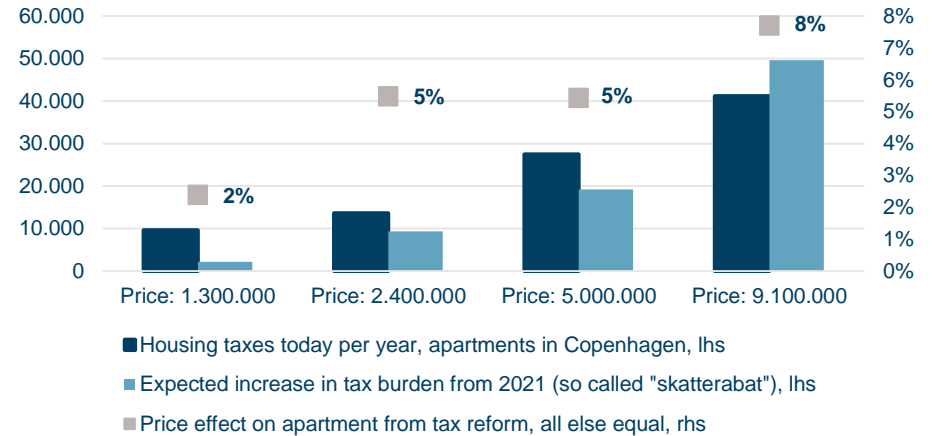
Biggest risk factor is higher interest rates – but also a risk from new tax reform, the supply side and fading price optimism

Interest rate increases will make the housing market in Copenhagen expensive



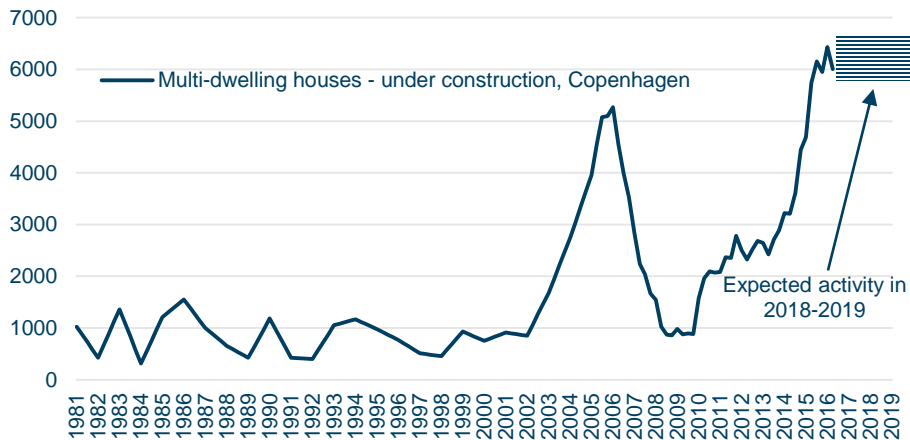
Source: Statistics Denmark, The Danish Ministry of Taxation, Finans Danmark and Realkredit Danmark

New tax reform will have a negative impact on apartments in Copenhagen



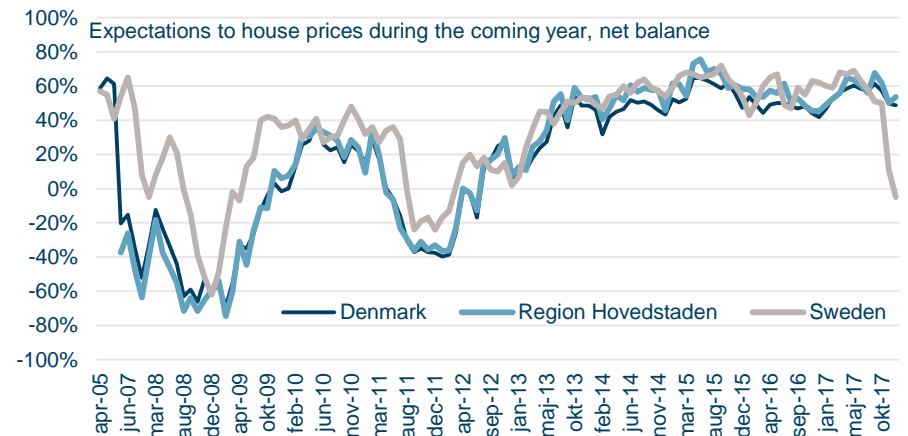
Source: The Danish Ministry of Taxation and Realkredit Danmark

Higher housing supply in Copenhagen will have a dampening effect on prices



Source: Statistics Denmark and Realkredit Danmark

High optimism about future prices – also a risk if optimism fades as in Sweden



Source: Greens Analyseinstitut for Dagbladet Børsen and Macrobond

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