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Access to the housing market for younger people with targeted easing of financing

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In recent years, there has been a debate about access to the housing market, especially for the younger part of the population. This has led to proposals for easing home financing from various stakeholders, and one proposal is to be able to use pension savings to buy a home. Calculations indicate that this will only lead to a few new younger homeowners, while house prices rise for everyone.

Rising house prices and fewer first-time buyers in larger cities

House prices in Denmark have risen since the financial crisis, especially in and around the larger cities. This is partly due to several years of falling interest rates and increasing household incomes. The proportion of first-time buyers has also decreased, especially in the capital and metropolitan municipalities where house prices have increased the most.

Easing home financing for younger people increases house prices for everyone

Younger first-time buyers are more often financially constrained than other buyers in their housing choices. Easing home financing for this group would allow them to bid more in a property deal, which could lead to house price increases for everyone. Higher house prices will counteract the immediate effect of the initial easing, leading to only few new *younger* homeowners. Other buyers would be pushed out of the housing market and there will be no more homeowners overall if the number of homes remains unchanged.

The pension system is of great importance both to the individual saver and the Danish economy overall

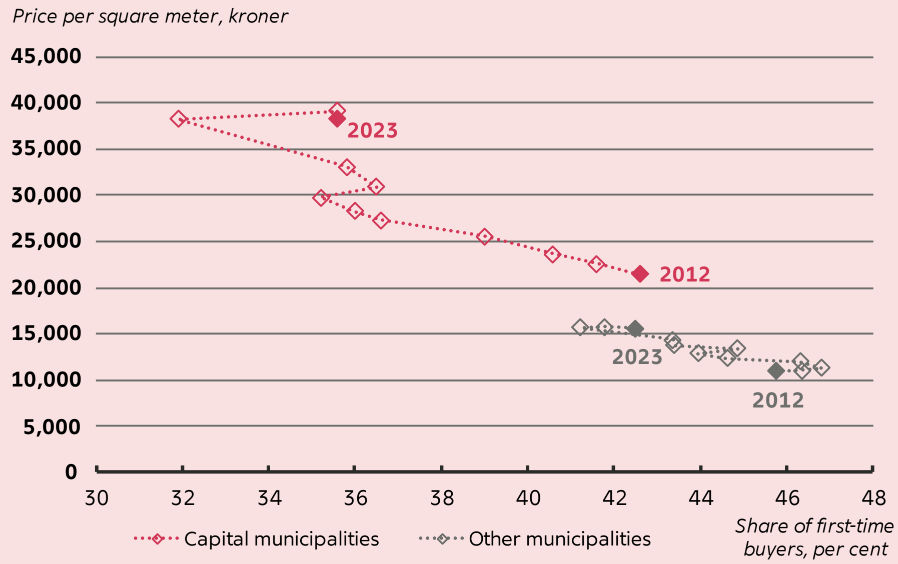
Saving for retirement is important for individuals and the economy overall, so changes to the pension system should be well justified. If pension savings are used to buy a home, wealth is moved from pension schemes to housing. This can have implications for overall savings, as there can be differences in return and risk associated with pension savings and the housing market. In addition, rising house prices can lead to higher indebtedness, weakening the financial resilience of some homeowners.

Why is it important?

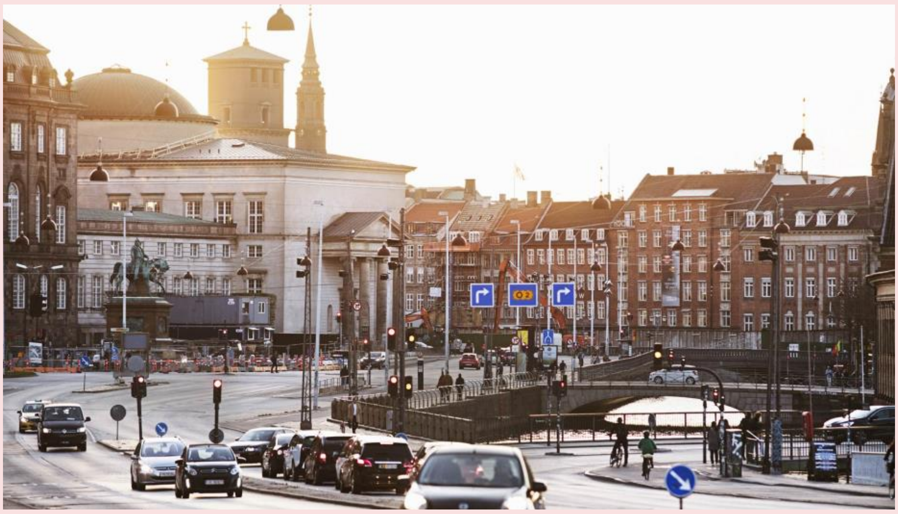
The housing market plays an important role in the Danish economy, as the value of owner-occupied housing can influence household consumption and savings behaviour. Housing debt makes up the most significant part of total household debt. The level of debt and the value of the property used as collateral for borrowing have an impact on financial stability. It is therefore important to analyse policies that can change home financing and thus affect the housing market and indebtedness. Saving for retirement is also important for the individual and for the economy overall, as pension savings contribute to stable incomes for individuals and robust public finances.

Easier financing for home purchases will increase demand for housing. However, if the number of homes remains unchanged, ultimately such a policy will not result in additional homeowners.

Main chart
House prices have increased and the share of first-time buyers has decreased since 2012



Note: Other municipalities reflect a simple average of metropolitan, provincial, commuter and rural municipalities.
Source: Statistics Denmark.



Keywords

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Home financing
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Financial stability
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Savings

01
Rising house prices have led to debate about access to the housing market

Rising house prices have led to a debate on how to help younger households enter the housing market, and there have been a number of specific proposals to ease home financing to this end.

One suggestion has been to allow them to use their pension funds to finance a home purchase. One specific proposal is that pension savings can be used for down payments and thus fulfil the requirement for a sufficient down payment when buying a home. Another is lowering pension contributions to increase disposable income here and now for younger buyers. A third has been that home purchases are financed partly through a third party, such as an investment or pension company, and partly through own funds. Other proposals in the debate include increased tax deduction for interest expenses and the possibility of easier access to interest-only mortgages.

In general, these proposals have in common that they can increase housing demand and lead to an increase in house prices, provided that the number of homes remains unchanged. Rising house prices in isolation will worsen purchasing opportunities and access to the housing market for younger households. House price increases, on the one hand, can lead to increased debt, affecting the financial resilience of some homeowners. Existing homeowners gain more housing wealth as house prices rise, which can strengthen their financial resilience and increase their spending opportunities.

This analysis describes the relationship between easing home financing and house price development and presents an example calculation based on the proposals to use pensions for house purchases. The results of the analysis illustrate that such easing may cause house prices to rise to an extent so that only few new younger households gain access to the housing market. At the same time, a similar number of other households would be pushed out of the housing market because they can no longer finance their home purchase. With more funds for home purchases, there will not be more homeowners overall if the number of homes remains unchanged.

Rising house prices and fewer first-time buyers

Developments in the housing market in recent years with rising house prices may have made it harder for younger households to buy a home. The problem seems particularly acute in municipalities in and around the capital, where prices per square meter have risen significantly more than for the other municipal groups, see chart 1.

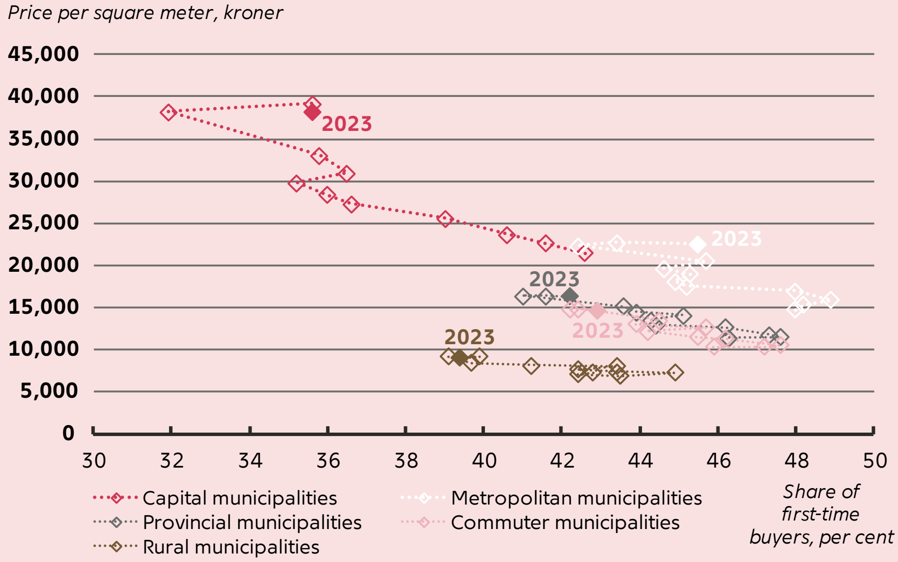
First-time buyers make up a decreasing share of home purchases

The proportion of first-time buyers has decreased in recent years as house prices have risen, see also chart 1. This trend is particularly pronounced in the capital municipalities, where the share of first-time buyers has fallen from 43 per cent in 2012 to 36 per cent in 2023. During the same period, the average price per square meter in the capital municipalities increased by almost 80 per cent. This development is due to a number of factors, including income and interest rate developments. The demographic development is not considered to directly explain the lower proportion of first-time buyers.[1]

CHART 1

House prices have increased and the share of first-time buyers has decreased since 2012, especially in the capital municipalities

Average square meter prices for single-family homes and share of first-time buyers within municipal groups from 2012 to 2023



Note: First-time buyers are defined as home buyers who have not owned a home in the previous three years.
Source: Statistics Denmark.

Rising house prices in the face of rising incomes and lower interest rates

A major factor behind housing demand is income, which increases over time. This trend of rising incomes has been stronger among homeowners in capital and metropolitan municipalities than among homeowners in the rest of the country, see chart 2. In addition to the increase in income, the increase in house prices in recent years should also be seen in light of the development of mortgage rates, which have fallen since the financial crisis, despite an increase in recent years due to high inflation.[2] Unlike income, interest rate development is the same for all parts of the country.

[1] Younger adults make up a significant proportion of first-time buyers. The 20-34 year old age group accounted for approximately 23.5 per cent of the population aged 20 or over in 2012, while in 2023 they accounted for approximately 25.5 per cent, see Statistics Denmark, Population figures.
[2] See Abildgren, Kim et al., Large shocks to the economy have driven house prices, *Danmarks Nationalbank Analysis*, no. 14, September 2024.

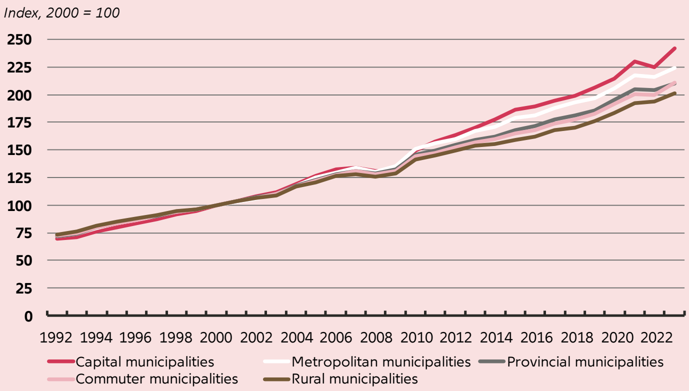
In capital and metropolitan municipalities, younger homebuyers spend a higher proportion of their personal budget on mortgage payments than in the rest of the country

Financial regulation and the credit policies of banks and mortgage credit institutions impose requirements on the personal finances of buyers. They generally aim to ensure the robustness of individual borrowers, credit institutions and thus also financial stability. In the capital and metropolitan municipalities, 38-40 per cent of after tax income was typically spent on mortgage repayments for buyers aged 35, see chart 3. In the rest of the country, only 28 per cent was used in the same age group.

CHART 2

Homeowner incomes have increased more in the capital and metropolitan municipalities than in the rest of the country

Median disposable income among owner-occupied households

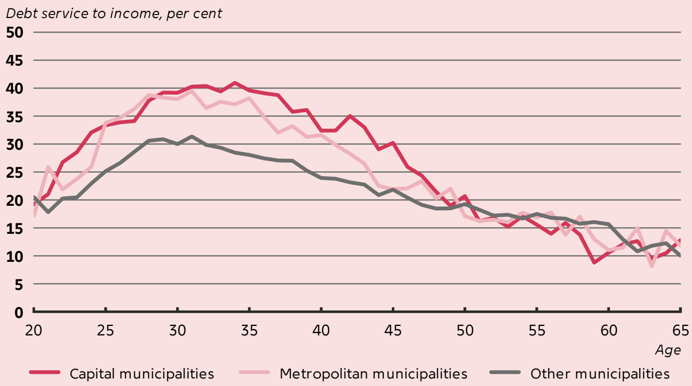


Note: Simple average for municipalities in each group.
Source: Own calculations based on register data from Statistics Denmark.

CHART 3

In capital and metropolitan municipalities, younger home buyers spend the highest proportion of their income on interest and instalment payments

Interest and instalment payments as a share of after tax income in 2022



Note: Median debt servicing ratio for home buyers in 2022. The debt service to income (DSTI) is total interest and instalment payments on housing loans as a proportion of household income (after tax).
Source: Danmarks Nationalbank.

02
Easier home financing for younger buyers increases house prices for everyone

Home financing in Denmark is provided by mortgage credit institutions and banks where mortgage financing of up to 80 per cent of the value of the property can be granted. Current regulation requires a down payment from the buyer of at least 5 per cent of the purchase price (the down payment requirement). In addition to the down payment requirement, the regulation also requires buyers to have a certain level of income, as they must be able to service the debt and other fixed expenses, and still have sufficient disposable income for other living costs (hereinafter called the ‘income requirement’).[3] These requirements, along with the institutions' own credit standards, limit how much a home buyer can borrow and therefore buy a home for.

House prices will rise as a result of easing home financing – even if the easing is targeted at younger buyers

In the short term, house prices are determined by housing demand, and housing demand increases with easier financing options, all else being equal. Since housing supply usually adjusts with a significant lag, higher demand will lead to higher house prices.

An increase in house prices affects all homeowners – younger first-time buyers, older first-time buyers and existing owners alike. If younger first-time buyers, for example, gain an immediate advantage because a new policy improves their financing options and allows them to buy a more expensive home, they still have to pay a higher house price as house prices adjust. Other first-time buyers who do not receive the same easing are worse off than originally, and may end up with a smaller home or have to abandon the purchase altogether if the price increases are high enough. All else being equal, existing owners are better off than originally, as their properties increase in value.

Younger households account for a large share of all home purchases

Home purchases are largely made up of younger home buyers. 18-35-year-olds accounted for 37 per cent of all home purchases in Denmark in 2022, see chart 4. As younger buyers account for a significant proportion of home purchases and, from a lifecycle perspective, can be assumed to have relatively low savings, their behaviour is considered to have a major impact on the development of house prices.[4]

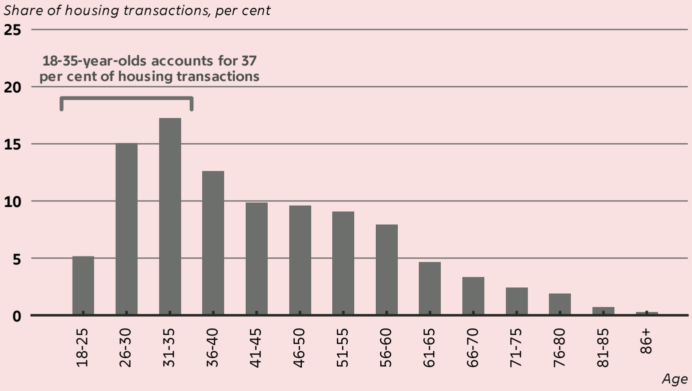
[3] The regulation, in the form of *the Executive Order on Good Practice for Mortgage Lending* and *the Growth Area Guidelines*, requires as a general rule a down payment of 5 per cent of the purchase price. It also means that the borrower must be able to service a loan with a fixed-rate and instalments in order to take out a loan with interest-only and/or variable interest rates. According to the Danish Financial Supervisory Authority's and the Consumer Ombudsman's guidelines for creditworthiness assessment, households must have sufficient disposable income, corresponding to at least a *modest standard of living*, to cover the consumer's variable expenses. Disposable income is income left over after fixed costs, including loan instalments, have been paid.

[4] Since the financial crisis, Danish households' net lendings have been close to zero, which should be seen in light of debt borrowing that occurs in parallel with the accumulation of pension wealth, see Andersen, Henrik Yde, Lars Risbjerg, Morten Spange and Robert Wederkinck, The Danish Savings Surplus: Trends in Firm and Household Savings, *Danmarks Nationalbank Economic Memo,* no. 6, September 2024.

CHART 4

Younger households account for over a third of home purchases

Number of home purchases by age group based on all transactions in 2022

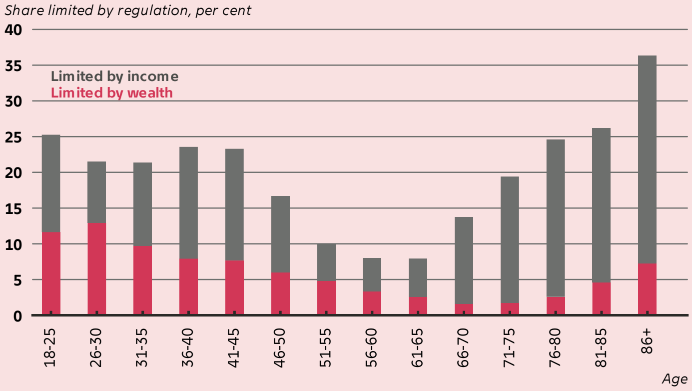


Note: Includes all housing transactions in Denmark in 2022 by age groups.
Source: Danmarks Nationalbank.

CHART 5

Younger buyers are more often limited in their housing choices than older buyers due to the down payment requirement

Proportion of home buyers who were limited by wealth or income at the time of purchase



Note: Includes housing transactions nationwide in 2022. Limited by wealth reflects a loan-to-value ratio close to 95 per cent of the purchase price. Limited by income reflects a disposable income at a level considered a minimum for the household based on current regulation. Fixed costs are determined based on household characteristics as in Meyer, Martinello and Nissen, Homeowners' budgets and debt servicing capacity projections, *Danmarks Nationalbank Economic Memo*, no. 4, June 2023.
Source: Danmarks Nationalbank.

Younger households are more often limited by low wealth than older households

Younger households are more often financially constrained in their housing choices compared to older households, particularly reflecting the fact that younger buyers have less wealth to spend. Calculations indicate that borrowing was close to as high as household finances allow under the current regulation in 21-25 per cent of all home purchases among 18-35-year-olds in 2022, see chart 5, which is significantly higher than among buyers at the older end of the working age group. This indicates that younger households are more likely than older households to buy a more expensive home if they have access to more wealth for the down payment.

There is no age threshold that defines whether a household is financially constrained or not. However, there tends to be a gradual transition over age to being less financially constrained in their housing choices, including being decreasingly limited by the down payment requirement. The nature of restrictions should also be seen in the context of where in the country the household wants to buy a home. Buyers may be limited by the down payment or income requirement, and in the larger cities where house price levels are relatively high, it is more often the affordability requirement (income requirement) that is the limiting factor. Outside the larger cities, on the other hand, low wealth and thus the down payment requirement seems to be more of a constraint.

House prices do not necessarily increase in a 1-to-1 ratio with an easing in home financing

If a financially constrained buyer is given easier access to home financing and can spend, for example, kr. 50,000 more for the down payment on a home purchase, then all else being equal, house prices will be pushed up. Several factors determine whether price increases will be larger or smaller than the easing in home financing itself.

A household that is already budgeting with the minimum possible amount available for spending (limited by income) cannot use its pension savings to further increase borrowing. This is because their income does not allow them to take out and service a larger loan. For example, if the household withdraws kr. 50,000 (after tax) from a pension scheme, they will be able to buy a home that is kr. 50,000 more expensive than otherwise.

Another household, which is *not* limited by income, will be able to buy a significantly more expensive home using their pension savings. If this household withdraws kr. 50,000 from a pension scheme, the amount can be used as a down payment for additional borrowing for the home purchase. With the 5 per cent down payment requirement, this down payment can be leveraged by a factor of 20, i.e. the household can buy a home that is kr. 1,000,000 more expensive using kr. 50,000 of pension savings. Thus, it has a significant impact on house prices whether a buyer is primarily limited by the down payment or income requirement.

However, the home buyer may only want to take advantage of a subset of the new financing option available through pension withdrawals. For example, they may only want to borrow kr. 500,000 more for the home purchase, even though it is possible to buy for kr. 1,000,000 more than initially. It is not immediately possible to quantify how much buyers *will* actually use of the additional financing option *available to* them.

Targeted easing can help a limited number of younger home buyers if other buyers can and will also increase their spending on housing

Targeted incentives for selected groups of buyers could give them an immediate advantage over other buyers. Overall, however, the effect of the easing on the target group may end up being limited. Firstly, the price increase itself will reduce the benefit of the ease, as mentioned above, as the benefit for the selected group is that they would have to bid higher prices in a housing deal, thus keeping other potential buyers out. Secondly, in many cases, the *other* buyers can still finance a home purchase – even if prices have risen. These two elements combine to limit the overall benefit to the target audience.

Example calculation where pension is included in home financing for up to 35-year-old first-time buyers

An example calculation is presented based on the proposals to use pensions for home purchases, focusing on first-time buyers up to the age of 35.

Pension savings are lowest in urban areas when measured relative to home purchase price

Based on actual home purchases among first-time buyers in 2022, pension savings can be calculated as a share of the home purchase price. This can be done across age groups to illustrate how much pensions could affect home finance options.

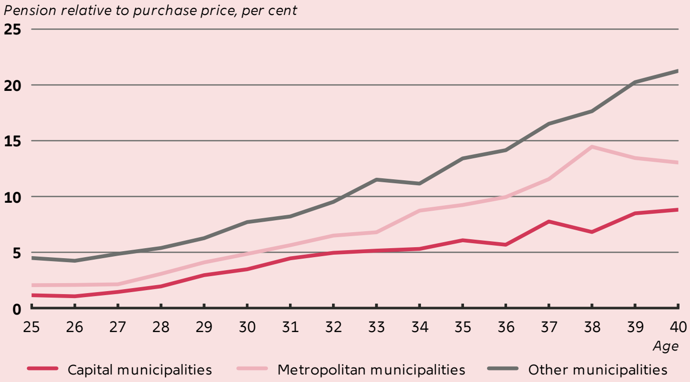
In 2022, pension savings (calculated after tax) accounted for 3, 6 and 9 per cent of the purchase price for 30-, 35- and 40-year-old first-time buyer households in the capital municipalities, respectively, see chart 6. For households who bought a home in the capital municipalities including Aarhus, Odense and Aalborg, pensions were slightly higher at 5, 9 and 13 per cent respectively for the same age groups. For other municipalities, the figures were even higher at 8, 13 and 21 per cent respectively for the three age groups. The difference should be seen in light of the higher house price levels in capital and metropolitan areas, while there is less difference in pension savings across the country.

The use of pension savings can thus be expected to have the least impact on home financing in urban areas, see chart 7, even though the challenge of entering the housing market here seems greatest for younger first-time buyers.

CHART 6

Pension savings make up the lowest share of the purchase price in capital and metropolitan municipalities

Pension savings (after tax) calculated the year before home purchase among first-time buyers measured in relation to the purchase price

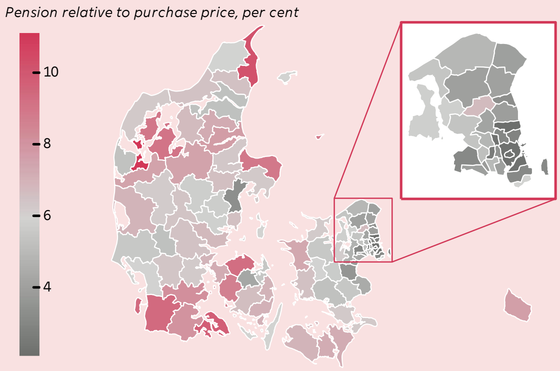


Note: Median pension savings in relation to the purchase price of the home by age of the buyer.
Source: Danmarks Nationalbank.

CHART 7

Pension savings may play a limited role in home purchases in urban areas, but a bigger role outside larger cities

Pension savings (after tax) calculated the year before home purchase among first-time buyers up to 35 years old, measured in relation to the purchase price



Note: Median pension savings relative to the purchase price of the home for first-time buyers up to age 35 in 2022, by municipality.
Source: Danmarks Nationalbank.

Potential pension purchase price increases most outside of urban areas

For each of the actual home purchases in 2022 among first-time buyers up to the age of 35, a potential purchase price can be calculated if households used their entire pension savings for the purchase. Only households up to 35 years of age are considered here, who are also financially constrained in their housing choices. As mentioned, this is the target group that could potentially buy a more expensive home using the pension funds. The potential purchase price should not be seen as an estimate of the total house price effect, but it illustrates the importance of easing home financing to the target group. The calculation assumes that home purchases comply with current regulations, including income and down payment requirements as outlined in chart 5.[5] This also means that the

[5] There is uncertainty in the calculations, such as whether the household income at the time of calculation reflects the income used in the bank's credit assessment. The calculation of wealth also depends on market rates at the time of calculation and does not take into account any transfer of wealth from other family members in relation to a home purchase.

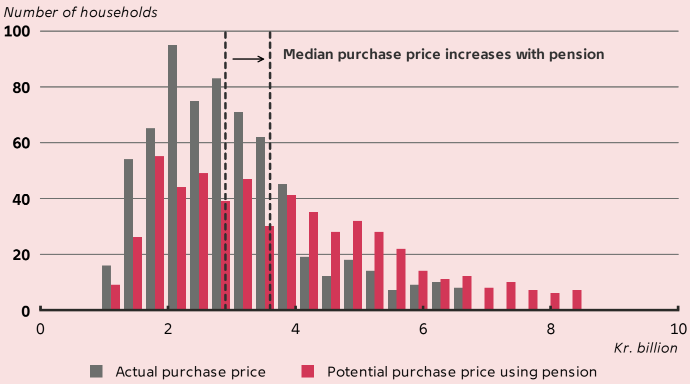
calculations reflect an upper bound where pension savings are fully utilised to buy as expensive a home as possible for the individual household.

Among the target group, the actual median home purchase in the capital municipalities was kr. 2.9 million in 2022, but by using pension savings for the same purchases, the median home purchase could potentially have been kr. 3.6 million, see chart 8. For home purchases *outside* the capital municipalities, the median purchase price could potentially increase from kr. 1.7 to 2.9 million, see chart 9. The higher increase in purchase price outside the capital and metropolitan municipalities should primarily be seen in light of the fact that pension savings are larger here than they are in urban areas when measured relative to the purchase price, see chart 7. It also reflects the fact that buyers outside of the capital and metropolitan municipalities are slightly less restricted in their housing choices due to affordability requirements and would therefore be able to significantly increase their borrowing by using their pension savings. On the other hand, supply elasticities are higher outside urban areas, reflecting the fact that it is easier to build new homes here than in the capital and metropolitan municipalities to meet housing demand.[6] Against this backdrop, it is expected that a measure would be less likely to lead to actual house price increases of the potential magnitude.

CHART 8

In capital municipalities, the potential purchase price among first-time buyers is increased by the use of pension savings, ...

Actual and estimated potential purchase price using pension savings in 2022 among financially constrained, younger first-time buyers in capital municipalities

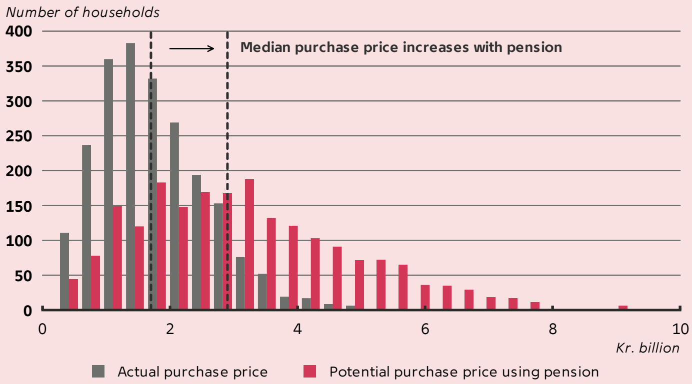


Note: Includes first-time buyers up to the age of 35 who are likely constrained by access to wealth or income in their home purchase choice. The grey bars indicate the actual purchase price, while the red bars indicate a calculated potential purchase price, where the household's pension savings calculated after tax are used for financing. The purchase potential thus reflects the maximum price that fulfils the loan rules. The vertical dashed lines indicate medians.
Source: Danmarks Nationalbank.

CHART 9

... while the increase is greater in other municipalities as fewer first-time buyers here are restricted by income requirements

Actual and estimated potential purchase price using a pension in 2022 among first-time buyers in metropolitan, provincial, commuter and rural municipalities



Note: Same as the note in chart 8.
Source: Danmarks Nationalbank.

Marginal housing demand determines the effect on house prices

The effect on house prices of a policy where pension savings can be used as a down payment when buying a home depends on which buyers have the decisive

[6] See Hviid, Simon Juul (2017) A regional model of the housing market, *Danmarks Nationalbank Working paper*, no. 121, November.

influence on housing demand. It can be argued that all housing transactions reflect the marginal demand for housing, which determines house prices. However, it can also be argued that it is primarily housing transactions where buyers purchase the most expensive home possible that define the marginal housing demand and thus the total house price effect of such a policy. Similarly, it could be the behaviour of first-time buyers that reflects marginal demand. It is not possible to observe the actual marginal housing demand. It is therefore necessary to make assumptions about this, and such assumptions affect the estimated impact on house prices.

Regardless of how much house prices rise with this policy, very few new younger households are expected to become homeowners in the capital municipalities

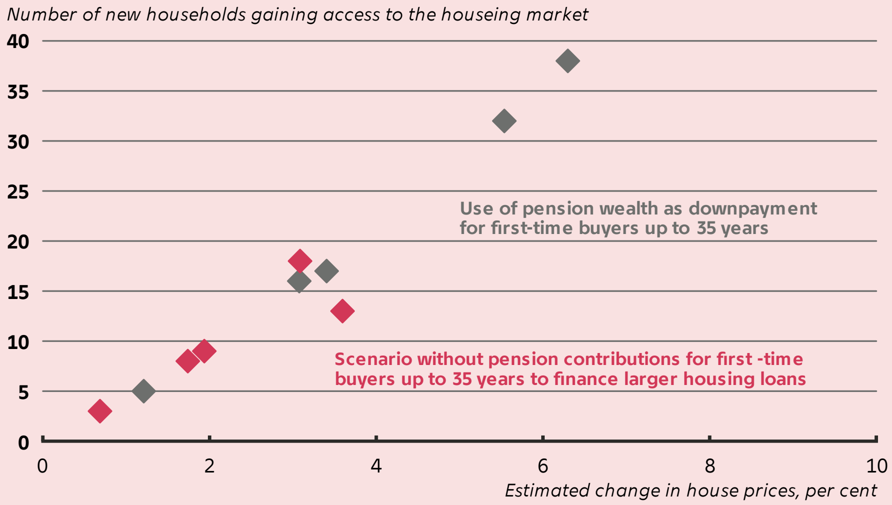
Whether house prices rise a lot or a little, the figures suggest that few new younger households will be able to become homeowners, even if they use their pension savings for the purchase. Even with assumptions in the calculations that give the highest possible price increases in the capital municipalities of up to around 6 per cent, slightly less than 40 new younger households will be able to enter the housing market, while a similar number of other first-time buyers will be pushed out of the housing market, see chart 10. Assumptions for the calculations are detailed in appendix 1. The calculations are considered an upper bound, as the number of homes is also assumed to remain unchanged. Each dot in the chart reflects a price estimate for the capital municipalities based on separate assumptions in the calculation about which group of buyers defines the overall house price development. The grey dots reflect calculations where the target group, i.e. financially constrained first-time buyers up to the age of 35, use their entire pension savings for down payment on a home purchase.

Another proposal mentioned has been to reduce the current pension contributions of younger households in order to increase their ability to finance higher interest payments and instalments. The red dots reflect calculations where buyers do not pay into a pension so that they can service a larger loan and associated interest and instalments on an ongoing basis. The calculations indicate that this measure may lead to slightly lower house price increases than the measure where pension savings are withdrawn to pay out on house purchases. It is expected that for both measures, the number of new younger homeowners will be very limited.

CHART 10

Estimates indicate that few new younger households can be expected to enter the housing market in capital municipalities when using pensions for financing

Number of financially constrained, younger first-time buyer households gaining access to the housing market in the capital municipalities by displacing a similar number of other households from the housing market.



Note: Number of actual home buyers who would not have been able to buy their home in 2022 due to calculated price effects, where each dot indicates a separate assumption about marginal housing demand. Two scenarios are calculated for first-time buyers up to 35 years old, including allowing pension wealth to be included in their home financing (gray) and assuming pension contributions at zero percent of their income (red). See appendix 1.
Source: Danmarks Nationalbank, Statistics Denmark and own calculations.

The number of new households gaining access to the housing market is calculated as the number of households that actually bought a home in 2022 but would not have been able to afford the same purchase with the estimated price increases. This means that some households will have to give up or postpone buying a home so that others can enter the housing market if the number of homes remains unchanged. Buyers who are being squeezed out of the housing market also include first-time buyers who are more than 35 years old and therefore unable to use pensions to finance their purchase. Repeat buyers would realise a capital gain on the sale of their existing home and would continue to be able to buy a home despite price increases. It is therefore assumed in the calculations that the households forced out of the housing market are replaced by new households who have been able to use pensions to finance their housing. Similar calculations outside the capital and metropolitan municipalities suggest that house prices could rise significantly more, but that still few new younger households would enter the housing market.

03
Eased home financing can affect gross debt and savings

Rising house prices can increase gross household debt

Gross household debt is expected to increase to some extent if younger households use pensions to buy homes. This should be seen in light of the house price increases that will come with increased housing demand. Pension savings in isolation could help reduce debt, but as pensions are expected to be used for more expensive home purchases, increasing prices for all homeowners and buyers, debt is expected to increase overall by using pensions for the purchase.

Rising house prices apply to both younger households, who are affected by such a policy, as well as other buyers who are not affected. This can weaken the financial resilience of these buyers, for example, during a severe recession with a loss of income, where they still have to service the larger debt. Conversely, existing homeowners gain housing wealth with house price increases, which can strengthen their financial resilience. This wealth gain among existing owners can be translated into increased consumption, and the price increases can thus influence macroeconomic developments.[7]

Danish households have high levels of debt by international standards.[8] Gross debt typically builds up early in life – in parallel with saving for retirement – and is about the same amount as the total financial wealth of younger households, see chart 11. High and rising gross debt, combined with locked-in (illiquid) pension savings, can make households vulnerable to a drop in income due to unemployment.

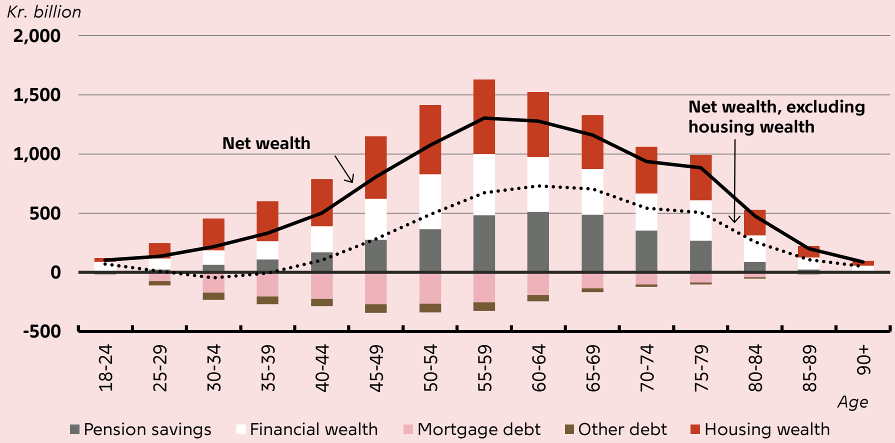
Finally, current loan rules regarding home purchases and other financial regulation are generally aligned with structural conditions and financial risks, where the purpose of the rules is to ensure the robustness of the individual home buyer, credit institutions and thus financial stability.

[7] Homeowner consumption can be expected to increase by 3-6 per cent of house price increases, see Andersen, Henrik Yde and Søren Leth-Petersen, Housing Wealth or Collateral: How Home Value Shocks Drive Home Equity Extraction and Spending, Journal of the European Economic Association, vol. 19, issue 1, February 2021, pp. 403-440, De Stefani, Alessia and Simon Juul Hviid, Housing Collateral and Home-Equity Extraction, *Danmarks Nationalbank Working Paper*, no. 135, February 2018, and Hviid, Simon Juul and Andreas Kuchler, Consumption and Savings in a low interest-rate environment, *Danmarks Nationalbank Working Paper*, no. 116, June 2017.
[8] See Danmarks Nationalbank, Economic implications of interest-only mortgages combined with high leverage, *Danmarks Nationalbank Analysis,* no. 8, May 2024.

CHART 11

Total gross debt is relatively high and for younger households it is about the same amount as total financial wealth

Total debt and wealth by age group



Note: The chart includes all Danish households (homeowners and other households). Housing wealth includes homes, cars and other real assets. Pension savings are calculated after tax at a rate of 40 per cent. Other debt includes loans from banks and debt to the public sector.
Source: Statistics Denmark and own calculations.

Total wealth is slightly more concentrated towards the housing market

If younger people use their pension savings to gain access to the housing market by buying slightly more expensive homes, wealth is transferred from pension schemes to housing. This can have implications for overall wealth, as there can be differences in return and risk associated with pension savings and the housing market. Pension savings are typically invested in a variety of financial assets, especially shares and bonds, but also commercial real estate, for example.

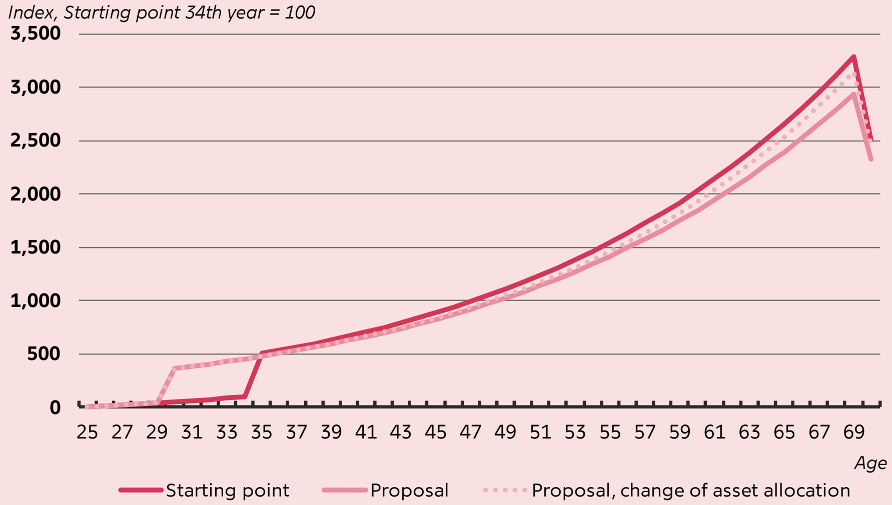
In a scenario where a person brings forward the purchase of a home by five years by withdrawing their pension savings for the purchase, wealth is moved from pension to housing, see chart 12. In the illustration, wealth is concentrated towards the housing market earlier in life, especially in the years immediately after buying a home, after which this concentration is reduced over time as pension savings build up. Changes in expected return and risk can have a significant impact on total wealth at the time of retirement, which is amplified by compounding effects. Assumptions underlying the illustration are elaborated in appendix 2.

There are factors that favour a more limited compounding effect. Younger people often have a very concentrated exposure to the housing market in the years immediately after buying a home, regardless of the use of pension savings for home purchase. In addition, the pension savings of younger first-time buyers are relatively small at the time of purchase. The optimal investment behaviour would also suggest more equity risk in pension savings after a home purchase to even out the concentration on the housing market, which can counteract the return impact of pension savings for home purchases, see the dotted line in chart 12.

CHART 12

Pension savings for house purchase concentrates total wealth in the housing market and can have implications for return and risk

Illustration of the development of a person's total pension and housing wealth, excluding debt



Note: 'Starting point': Buying a home at the age of 35. Pension funds are not used for the home purchase. 'Proposal': Buying a home at the age of 30. Pension funds are withdrawn and used for the home purchase. Total wealth consists of both pension and housing, excluding debt. Assumptions are elaborated in appendix 2. The illustration refers to the people who gain access to the housing market as a result of a measure.
Source: Own calculations.

Appendix 1 Assumptions behind calculations of house price effects

The target group for the policy in the example calculation includes first-time buyers up to the age of 35 who are considered to be financially constrained in their housing choices (approximately 3,000 transactions). Among actual home purchases in 2022, a potential purchase price for this group is calculated to reflect the maximum house price each household would have been able to finance by including their pension savings (calculated after tax). The purchase price is limited by the down payment being at least 5 per cent of the value of the home and that the household, after interest payments and instalments, can maintain a modest level of consumption, according to the Danish Financial Supervisory Authority and the Consumer Ombudsman.

The price development in the housing market is a result of the behaviour of all home buyers and owners. When calculating house price effects, it is assumed that some buyers have a greater impact on price formation than others. It is not possible to observe which of the actual home buyers belong to this group of marginal home buyers. In the example calculation, five different calculations are therefore made, which differ in that they are based on different assumptions about the definition of the marginal home buyer, see table 1.

TABLE 1

Financially constrained first-time buyers up to the age of 35 account for 5-29 per cent of price-determining home purchases depending on assumptions about the marginal home buyer group

Home sales in 2022 by potential groups of marginal home buyers	Number	Of which financially constrained younger first-time buyers (per cent)
All buyers	57,235	5
All first-time buyers	22,235	14
Home buyers up to 35 years old	21,460	15
First-time buyers up to 35 years old	14,106	22
Financially constrained home buyers	10,722	29

Note: Financially constrained indicates households that are either limited by wealth or income. Constrained by wealth is defined by households that have a loan-to-value ratio of around 95 per cent, while those who were limited by income had a disposable income at the level of what the regulation recommends as a minimum for the household (modest living standard).
Source: The credit register, Statistics Denmark and own calculations.

The policy increases housing demand among the target group, while all other buyers are assumed to be unaffected by the policy. The total price effect is then calculated by calculating the difference between the potential purchase price and the actual purchase price for the target group, and is averaged within each municipality. This average increase is then weighted by the number of transactions in each municipality by the target group of the five groups of marginal buyers mentioned in table 1. It is assumed that the housing stock remains unchanged.

Appendix 2 Wealth implications – assumptions

TABLE 2

Assumptions to illustrate implications for total wealth, excluding debt

Area	Assumptions for the 'Starting point' and 'Proposal'	
Annual income per person, 25th year	kr. 235,100, calculated based on Statistics Denmark, personal incomes, average	
Annual salary increase	Annual wage increase rates are calculated based on Statistics Denmark, personal incomes, average	
Annual productivity growth	1 per cent	
Retirement age	70th year	
Pension contributions	From 25th up to and including 69th year	
Saving for retirement as a share of annual income	12 per cent	
Pension, allocation of contributions	Shares: 60 per cent, bonds: 30 per cent, commercial real estate: 10 per cent	
Annual expected return	Shares: 8 per cent, bonds: 3 per cent, commercial real estate: 5 per cent, own assumptions based on the Council for Return Expectations	
Tax on pension returns	15.3 per cent.	
Tax on pension disbursements	40 per cent	
Annual expected return on housing assets	3 per cent	
Tax on returns on residential property	0 per cent	
Area	**'Starting point'**	**'Proposal'**
Home purchase	35th year	30th year
Pension used to buy a home?	No	Yes
Pension, allocation of contributions	Shares: 60 per cent, bonds: 30 per cent, commercial real estate: 10 per cent	*Proposal (before and after buying a home):* Shares: 60 per cent, bonds: 30 per cent, commercial real estate: 10 per cent *Proposal with higher risk allocation after home purchase:* Shares: 75 per cent, bonds: 15 per cent, commercial real estate: 10 per cent
Housing asset (present value, 30th year)	kr. 1,750,000	kr. 1,750,000 + pension disbursement on home purchase (pension savings after tax)

Source: Own assumptions.

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