Analysis

Nordic housing market risks can affect Finland's economy

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AUTHORS



Juho Nyholm
Economist



Katja Ahoniemi
Senior Economist

The Bank of Finland has been monitoring Nordic real estate market risks for a considerable time. There are substantial vulnerabilities associated with household indebtedness and residential property prices in the Nordic countries, and lending to the real estate sector by Nordic banks is high. Our analysis shows that the Nordic countries' financial stability risks also represent a risk to Finland's economy. A connection exists between the rise in household debt in the other Nordic countries and tail risks in the Finnish economy, i.e. the elevated probability of significant reductions in total output. The risks in the real estate sector have been dampened using macroprudential instruments, but the European Systemic Risk Board's latest assessment suggests this is not yet sufficient.

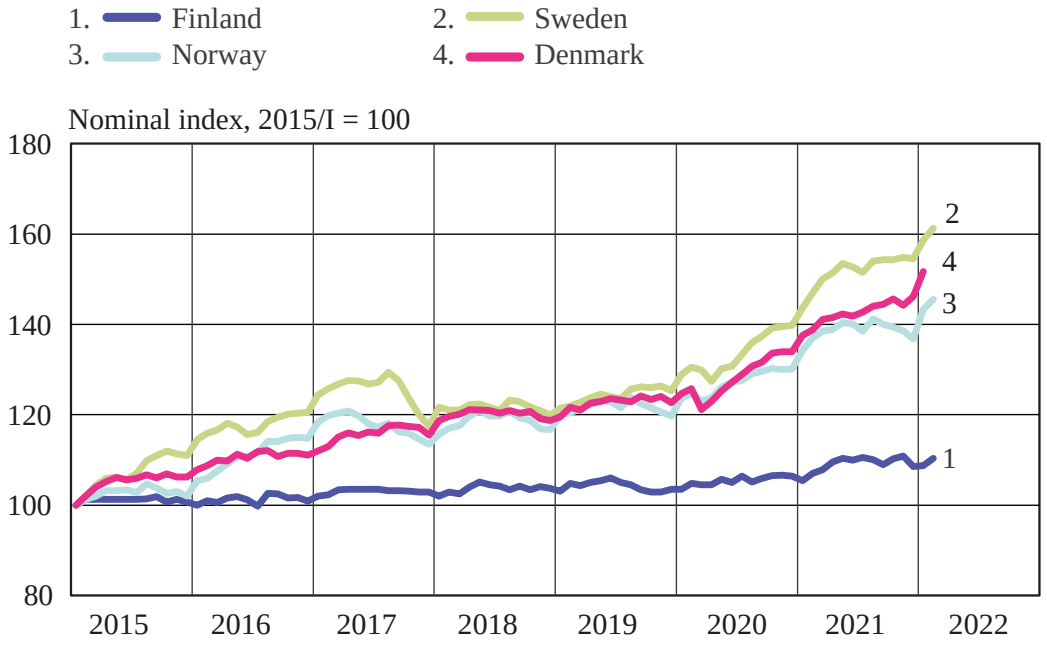


Rise in residential property prices increases housing market risks

Residential property prices have been rising in the other Nordic countries for a number of years (Chart 1). The rise in prices has been especially marked during the COVID-19 pandemic: residential property prices have risen in nominal terms in Sweden, Norway and Denmark by more than 20% since the start of 2020. In Finland, the corresponding rise has been about 7%. The gap between Finland and the other Nordic countries is attributable in part to the differences in regional price trends. According to a recent Statistics Finland report, Finland is the only Nordic country with regions where residential property prices have been falling for some time. This has contributed to the fairly level price trend for the country as a whole.

Chart 1.

Residential property prices have risen during the pandemic – especially in Sweden



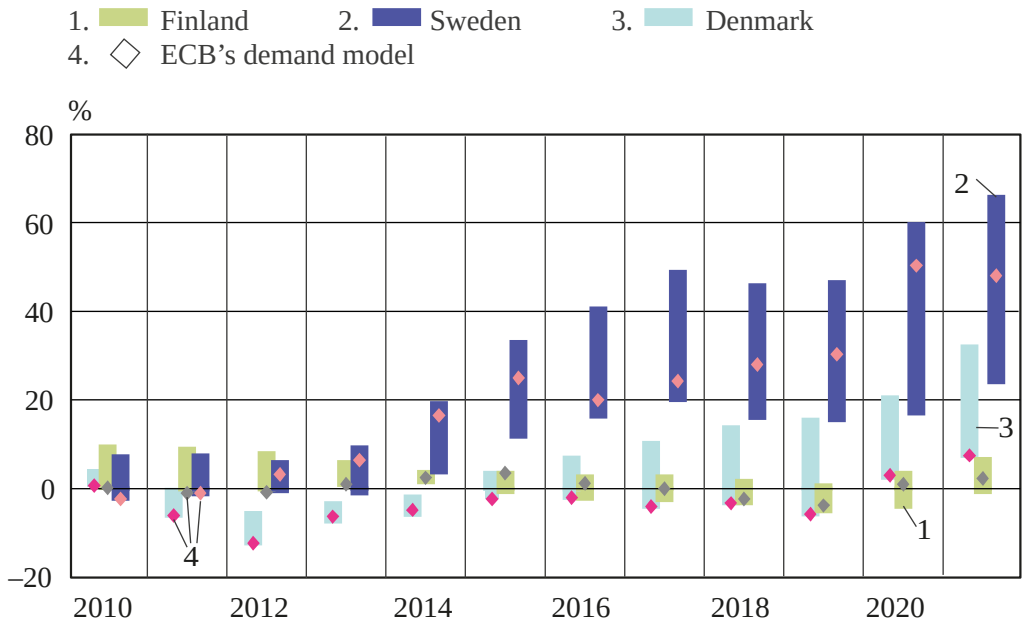
Finland: old dwellings in housing companies. Sweden, Denmark and Norway: all dwellings.
Sources: Statistics Finland, Valueguard, Statistics Denmark, Eiendom Norge, Macrobond and calculations by the Bank of Finland.

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Based on an analysis by the European Central Bank (ECB), there are signs of overvaluation in Sweden's residential property prices. The conclusion reached using a number of valuation methods is that the rapid price rise in Sweden cannot be explained on the basis of conventional demand or supply factors. The overvaluation measures produced with these methods are illustrated in Chart 2.[1] The overvaluation in Sweden is significant at a European level and has grown during the 2010s. The ECB's analysis shows that residential property prices in both Finland and Denmark are in line with the general trend in the economy, although in Denmark some indicators have shown signs of upward movement in recent years. The increase in newly started construction projects might ease the upward pressure on residential property prices in Sweden in the medium term.

Chart 2.

Indications of overvaluation in housing prices on Nordic housing markets have increased in recent years



The bar heights illustrate the largest and smallest estimates obtained with the different methods. The Chart includes estimates for Finland and Sweden up to September 2021; the latest estimate for Denmark is June 2021.
Source: European Central Bank.

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The housing market has often been a driver of economic crises. For example, the global financial crisis in 2008 began on the US housing market. These crises have typically been preceded by a period of rapidly rising residential property prices, when household indebtedness has grown due to housing purchases being financed with considerable leverage. If the rise in residential property prices proves unsustainable, a rapid plunge in prices can follow. A drop in asset values could then lead to a contraction in consumer demand especially by heavily indebted households, which could trigger or worsen an economic recession.

The European Systemic Risk Board (ESRB) has drawn attention to the risks in the Nordic housing markets. The ESRB has issued Finland, Sweden and Denmark both warnings on vulnerabilities and recommendations on particular measures to be taken. The measures taken by these countries to curb the risks from their housing markets have been assessed in the ESRB's latest report published in 2022, which found the measures to be insufficient in part. Norway has previously received only a warning; the measures it has taken have been considered sufficient for the time being.

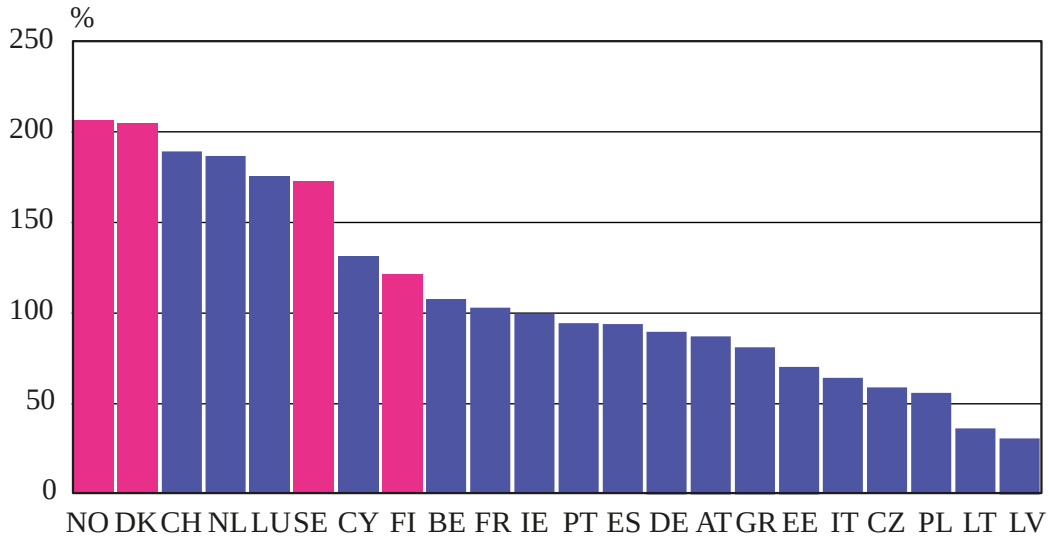
Nordic households have high debt-to-income ratios

The pandemic-related economic crisis has been exceptional in regard to residential property prices, as these have risen extensively around the world during the time of the pandemic. This has been due in part to investment in housing as a result of people increasingly working at home, and spending that might otherwise have been made on travel has instead been channelled into housing. In an environment of low interest rates, the good availability of housing finance may have boosted the demand for residential property, and thus property prices as well. The investment in housing and the low cost of housing finance have then together contributed to a rise in residential property prices and growth in household debt.

Owner-occupied housing forms a major share of household assets, and for some households housing loans are remarkably large in relation to disposable income. The high indebtedness of households constitutes a significant vulnerability for financial stability in the Nordic countries. In comparing household debt against annual disposable income, the Nordic countries rank among the highest in Europe (Chart 3). The high level of household debt could lead to problems if interest rates were to rise. Consumer demand would then suffer, causing GDP growth to falter. In the worst case, some households could have difficulty repaying loan instalments if, for example, unemployment were to grow or temporary layoffs increase.

Chart 3.

Nordic households have a high ratio of debt to disposable income



For each country the latest observation is given (31 Dec 2020, 30 Sep 2021 or 31 Dec 2021).

Sources: European Central Bank and Eurostat.

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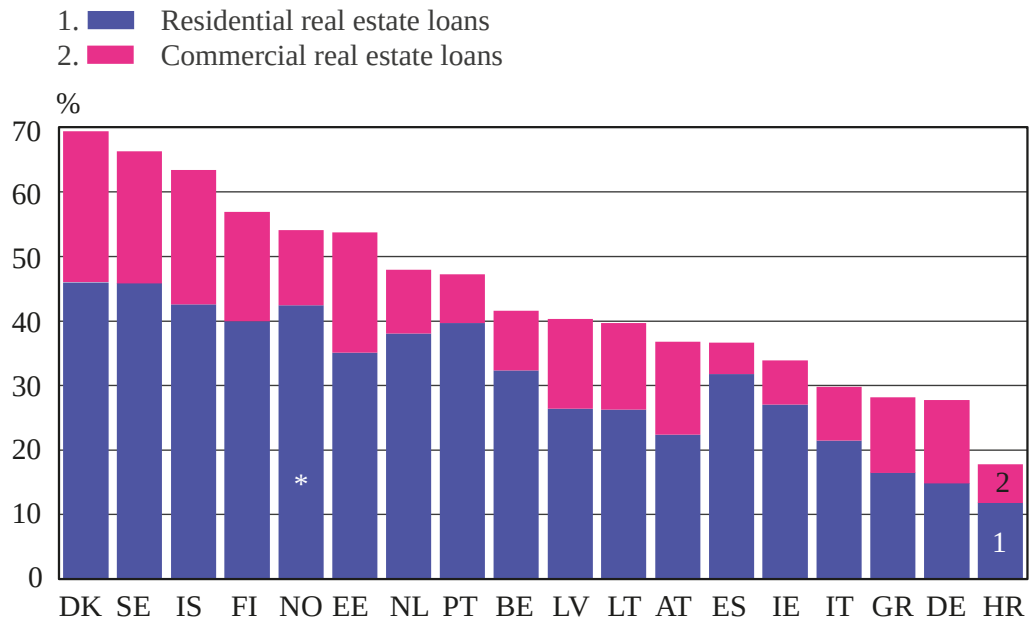
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Nordic banks' receivables from real estate sector among Europe's highest

The Nordic countries are, by international comparison, particularly exposed to problems affecting the residential and commercial property markets, because their banks have on their books a considerable amount of housing and commercial property loans (Chart 4). In Denmark, lending connected with the property market represented almost 70% of the loan stock of the country's banks at the end of 2021. The corresponding figures for Sweden, Finland and Norway were 66%, 57% and 54%, respectively. In many of the larger euro area countries, the share is below one third.

Chart 4.

Nordic banks have considerable exposures to the real estate sector



*Norway's data 31 March 2021.
**Other countries 31 December 2021.

Source: European Banking Authority.

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A significant proportion of the credit risks of Nordic banks is related to lending collateralized by property. The commercial property sector is traditionally cyclically sensitive and can produce loan losses for banks in a recession. However, the Nordic banks' loan losses on housing loans have traditionally been small. Loan losses have also remained low during the pandemic in part because of the various support measures, such as payment holidays. While the payment holidays have largely ended already, the proportion of non-performing housing and commercial property loans in the Nordic countries is still below the European average.

Nordic banks finance a significant portion of their activities by issuing residential mortgage-backed covered bonds. The efficient functioning of the covered bond market is vital for the banks' funding, and the quality of the real estate loan stock is very important for the availability and pricing of that funding. The covered bond market has functioned well also during the pandemic, with the exception of a short time in spring 2020. The market has also remained undisrupted since

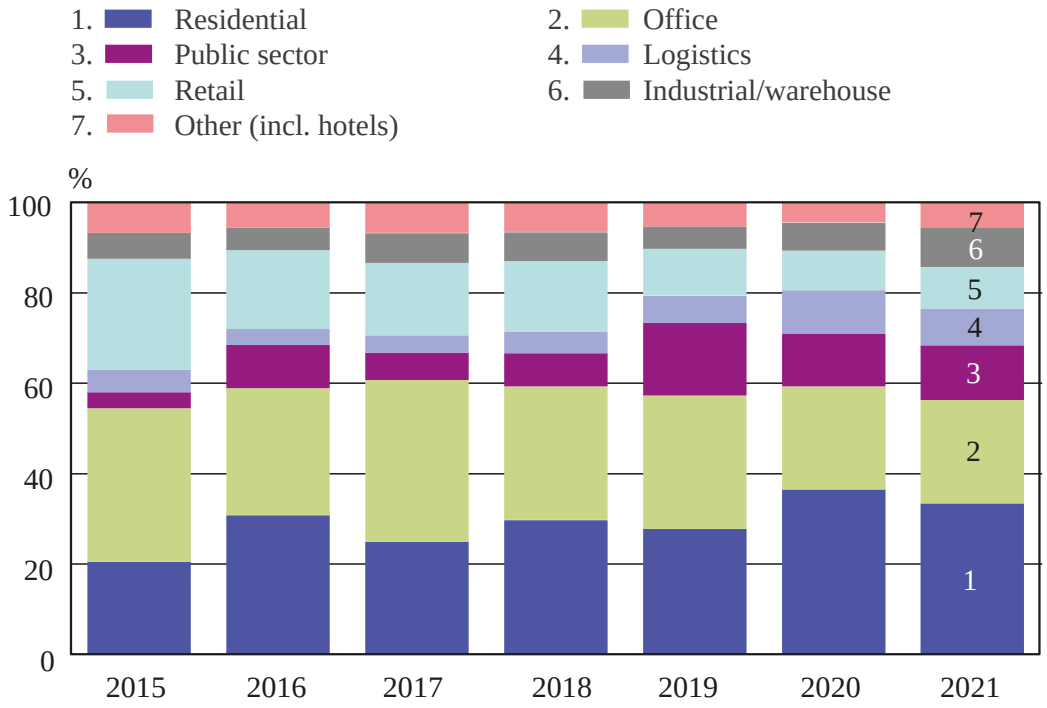
the start of Russia's invasion of Ukraine.

Residential property plays a major role in the real estate investment market

Professional real estate investors include pension insurers, insurance companies, real estate investment firms, and funds. They invest in a diverse array of real estate, such as residential property, office buildings, shopping centres, care homes and logistics facilities. The broader real estate investment market in the Nordic countries is closely linked to the housing market, as residential property has in recent years been the biggest individual sector in real estate investment (Chart 5). Residential property has provided investors with comparatively stable returns, especially during the pandemic, when restaurant and hotel properties, for example, have been granted rent relief.

Chart 5.

Residential property is the largest sector in the Nordic real estate investment markets



Source: Pangea/Mrec.

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Residential property's share of new real estate investment varies quite substantially by country, from Norway's figure of just under 15% to almost 60% in Denmark. Office and retail property has in recent years accounted for a declining share of real estate investment, while the opposite is the case for industrial, warehousing and public sector property. These changes reflect longer term trends on the real estate market, with the spread of home working and online purchasing, and the growing need for properties in the care sector, for instance.

The strong significance of residential property on the real estate investment market also contributes to the rise in residential property prices. During the pandemic, residential property prices have risen by more than household indebtedness. This is attributable in part to the demand from professional real estate investors.

Nordic households' indebtedness reflected in Finnish economy's vulnerabilities

Macroprudential policy is used to ensure that banks have sufficient equity and loss-absorbing capacity during economic downturns. Macroprudential regulation is used to prepare not only for the most likely path taken by the economy but, above all, for the more improbable and particularly detrimental scenarios. In analysing these so-called tail risks for the economy, the quantile regression method has proven a very useful tool.[2]

'Tail risk' refers to a drop in gross domestic product (GDP) which could be triggered by an improbable economic crisis. There are various definitions of 'improbable', but in this analysis it refers to a probability of 5% that a downturn would occur. Using the quantile regression method it is possible to estimate the extent to which GDP growth would weaken at each point in time if the tail risk were to materialise. The scale of the crisis is not constant, but depends on the prevailing state of the economy. Macroprudential policy is used to reduce the magnitude of the tail risk without affecting the most likely favourable path of GDP growth.

From previous studies it is known that a rapid accumulation of household debt foreshadows the emergence of an economic crisis as well as a bank crisis, which would deepen and prolong the downturn already under way. Therefore, it is no surprise that there is a solid statistical link between the pace of indebtedness and tail risks to the economy.[3,4]

There are also financial stability risks associated with a sudden collapse in the overvaluation of residential property prices. A rapid shrinkage in residential property assets would become visible directly in the capital adequacy of banks and would reduce private consumption. A tightening of financing conditions would then also become evident both in investment and in purchases of durable consumer goods.

Vulnerabilities in the economy typically grow gradually over a long period of time. A number of studies have noted that the pace of household debt accumulation is the best predictor of the onset of a crisis a few years later.[5] Hence, it is interesting in regard to tail risks to try and estimate how risks will develop, say, three years ahead, because predictive variables will have the greatest explanatory power over this kind of timescale.

Finland's economy is strongly connected with the other Nordic countries.[6] On the financial markets, this is evident in the banking sector's interconnectedness, and in the real economy it is apparent in the foreign trade figures. Risks present in these neighbouring countries are also risks for Finland.

Negative shocks may be transmitted across borders through various channels, and the more closely the economies are interconnected, the easier the transmission. The materialisation of risks and a reduction in both consumption and investment in Finland's Nordic neighbours will directly affect Finland's export income.

The cross-border activities of Nordic banks also represent a channel for the transmission of these shocks. The capital adequacy of banks might weaken as a result of credit losses originating from one country or the realisation of market risk. Solvency is measured at the group level, and thus financing conditions would be tightened in all the countries in which the bank has operations. Furthermore, the credit risk on loans granted abroad by Finnish banks might be realised as GDP growth slows in the countries in question, which would also tighten financing conditions.

The impact of the economies of Finland's Nordic neighbours on its tail risks is illustrated in Chart 6. The Chart makes use of the quantile regression method referred to above.[7] The analysis indicates that Nordic risk factors clearly increase the tail risks for the Finnish real economy. Tail risks indicating a deteriorating trend are shown in the Chart on the lower part of the shaded area. The lower edge of shaded area 2 depicts the magnitude of the tail risks explained only by domestic factors. The lower edge of shaded area 1 depicts the tail risks in their entirety when the neighbouring Nordic economies are also taken into account.

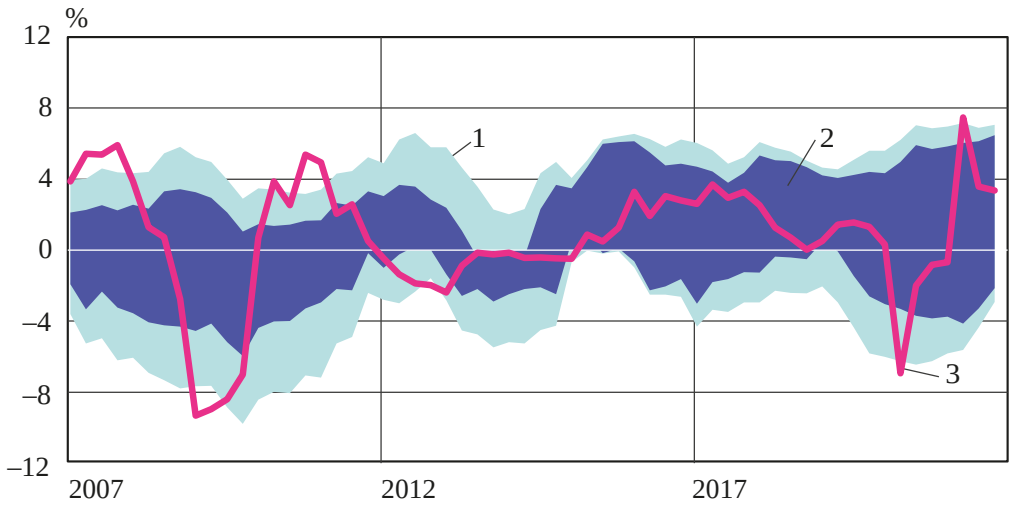
Two conclusions can be drawn from the Chart. Firstly, the tail risks were considerable prior to the global financial crisis and the COVID-19 crisis. The shock caused by the global financial crisis in particular was somewhat more severe than could have been expected on the basis of the model, but the preceding rapid rise in household indebtedness added to the magnitude of the tail risks and probably exacerbated the recession. Even if the shock had been smaller, the conditions for a major drop in GDP were in place.

Secondly, the impact of external variables on downside risks is significant. Although these variables do often develop in the same direction as domestic risks, their impact on the magnitude of Finland's tail risks was at its greatest in 2008 and 2020, in particular. The rapid rise in indebtedness among households abroad is a key factor escalating tail risks in Finland. Sweden is of great significance for Finland's economy, which is why Sweden's risks are particularly prone to being transmitted to the Finnish economy.

Chart 6.

Impact of external variables on magnitude of tail risks in Finland's real economy is elevated prior to greatest downturns

1. Forecast of 95% probability area, impact of external variables
2. Forecast of 95% probability area, impact of domestic variables only
3. Observed annual real GDP growth



Source: Calculations by the Bank of Finland.

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Real estate market risks increase the capital requirements of Nordic banks

The Nordic countries have introduced macroprudential instruments to help curb the risks arising from real estate loans and household indebtedness. Macroprudential instruments connected to the real estate market include not only risk weight floors of property-specific loans and instruments that directly concern lending for housing purchases, but also the countercyclical capital buffer pertaining to banks, intended for controlling cyclical systemic risks.

The countercyclical capital buffer is intended especially to curb systemic risks arising from overheating in the financial cycle. Signs of overheating are considered to include an exceptionally rapid rise in lending and in residential property prices.

Sweden, Norway and Denmark had already set a countercyclical capital buffer for banks before

the pandemic. Prior to the pandemic, the buffer was 2.5% in Sweden and in Norway, and 1% in Denmark. Denmark had also announced pre-pandemic increases in the buffer to 2%. Following the outbreak of the pandemic, the buffer was lowered in Sweden and in Denmark to 0% and in Norway to 1%. Now all three countries have again announced increases in the buffer as they move from the exceptional conditions of the pandemic towards normal circumstances.

Following lessons learned in the pandemic, Sweden has adjusted its strategy on the use of the countercyclical capital buffer, adopting a 2% positive neutral level even for normal circumstances, when there are not necessarily any signs of an increase in risks. This allows better protection against unexpected shocks to the financial system – even those that do not originate from the banking sector itself.

Sweden and Norway have introduced risk weight floors for residential and commercial property loans, to be used in banks' capital adequacy calculations. The risk weight floor can be used to set a lower limit on the risk weights of certain loans. The higher a loan's risk weight, the more equity a bank must have in order to cover the loan's credit risk. Since credit losses associated with housing loans have historically been low, they have very low risk weights.[8]

All the Nordic countries use macroprudential instruments targeted at residential mortgage borrowers. These instruments include the maximum loan-to-value ratio (LTV ratio). The LTV ratio determines how large a housing loan can be obtained by a borrower in relation to the value of the property. The toolkit of macroprudential instruments targeted at residential mortgage borrowers is nevertheless more varied in the other Nordic countries than in Finland. Norway operates a debt-to-income cap, which can be used to restrict the total amount of a household's debt in relation to its gross income. In addition, Sweden and Norway have a housing loan amortisation requirement. In both countries, the amortisation requirement concerns households whose housing loans are large in relation to the value of the property.

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Notes

1. There are four different valuation methods. One of them is demand-based, focusing on the divergence between property prices and household income. Two deal with residential properties as investments and seek to assess whether the return on housing capital is justified in the light of interest rates and the return on other forms of capital. The fourth, an ECB demand model marked separately in the Chart, looks at the price level, taking into account not only factors that affect demand but also supply-side factors that are assumed to be fixed in the short term. The model's estimation uses information from the earlier research literature on the effects of demand and supply factors on residential property prices. See the ECB's Financial Stability Review June 2011 and November 2015. ↑
2. This method was originally used for studying tail risks in the real economy by Adrian, Boyarchenko and Giannone (2019). The method's advantages have been detailed in a blog post. ↑
3. Schularick and Taylor (2012) present a robust statistical case using statistical data on economic crises covering a long period and a number of countries. ↑
4. Nyholm and Voutilainen (2021) find a statistical connection between household indebtedness and tail risks using Finnish data. There is more on this in a Bank of Finland Bulletin blog post (in Finnish). ↑
5. Lloyd, Manuel and Panchev (2021), Schularick and Taylor (2012). ↑
6. The interconnectedness of the Nordic economies has previously been studied in, for example, a Bank of Finland Bulletin analysis. ↑
7. The analysis is based on a method presented in Lloyd, Manuel and Panchev (2021) that focuses on the extent to which the economic health of UK trading partners affects the UK's tail risks. What is presented here is based on an adaptation of the same method for the Finnish, Swedish, Norwegian and Danish data. The magnitude of the tail risks is explained by growth in household debt and residential property prices, but also by stock market volatility and set of control variables on the real economy, such as GDP growth, inflation and interest rates. In the analysis, the weighting attached to external variables in explaining a country's risks depends on how large the export weighting is between the two countries in question. ↑
8. Finland did use a risk weight floor for housing loans in 2018–2020, but it discontinued this at the start of 2021 for various reasons, one of which was that Finnish banks' average risk weights for housing loans exceeded the floor level. Housing market risks in Finland have affected banks' structural additional capital requirements, such as the systemic risk buffer. This buffer was lowered to 0% after the start of the pandemic. ↑

Keywords

household indebtedness, macroprudential policy, real estate market