REPORT

Stability in the Financial System

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Contents

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Stability assessment

The global economic recovery in 2021 has been stronger than expected, in part as a result of powerful support measures. This has meant that bankruptcies and credit losses were limited, which reduced the immediate risks for the financial system. Strong demand also contributed to an increase in inflation globally, but most forecasters and market participants consider the rise in inflation to be temporary. Long-term market rates have not increased significantly, either. However, if the inflation persists, interest rates may rise, which would have an impact on both households and companies since they are noticeably more indebted today than they were before the pandemic. Rising interest rates could also lead to a rise in risk premiums, which are very low today. This could result in, for example, a drop in asset prices and an increase in financing costs. One sector that is vulnerable in such an environment is commercial real estate. Due to rising risks in these firms, banks need to continue to have large capital buffers, and it is also important to reduce the vulnerabilities on the corporate bond market and the fund market.

The support measures have been necessary for maintaining economic activity during the crisis and supporting the recovery. In particular, the measures helped stabilise the financial markets, which ensured access to financing during the crisis. Central banks continued their support measures in the form of asset purchases even after the acute period of the crisis. Long-term asset purchases contribute to stability risks by applying pressure to interest rates and risk premiums, which leads to increased risk-taking and higher debt. These types of measures can also have a negative impact on the functionality of the Swedish fixed-income markets. The longer the purchases are made, the greater the risk that such effects become permanent. Since Sweden's economy has largely recovered, and there is good access to financing in the financial system, the phase-out of asset purchasing should begin.

It is now important to once again build up resilience in the financial system. Finansinspektionen (FI) has therefore made the decisions, for example, to withdraw the general possibility of exemption from the amortisation requirement at the end of August and reactivate the countercyclical capital buffer. FI has set the buffer at 1 per cent, and it goes into effect as of September next year. The increase is the first step in a gradual increase towards what FI considers a normal level. FI is also continuing its efforts to strengthen the functionality of the corporate bond market and fund market.

Risk-taking is high

FI takes the position that risk-taking on the financial markets continues to be high. Low interest rates for a long time have meant that investors are taking more risk to gain a return. Despite signs of higher inflation the past year, the low interest rates

have largely persisted. During the economic recovery, risk-taking increased further. Risk-taking has been diluted by the extensive quantitative easing, for example the purchase of housing bonds and corporate bonds. Risk premiums are as low or lower than they were before the pandemic.

Support measures have driven up asset prices by lowering the price of both capital and risk. Prices of both financial assets and housing and real estate have also increased significantly. Rising share prices played a role in households' savings becoming more concentrated in shares and equity funds. The percentage of investments that life insurance undertakings and occupational pension undertakings are placing in shares also continued to increase. High asset prices have resulted in the build-up of vulnerabilities. A drawn-out period of continued support measures could therefore lead to continued risk build-up and incorrect capital allocation. This could result in a stronger correction in asset prices in the future if conditions were to change or a shock were to occur. Triggering factors could be, for example, an increase in interest rates or events that increase uncertainty on the financial markets.

Increase in vulnerability linked to debt

The debt of non-financial corporations and households has been high for a long time. In 2021, household mortgages continued to increase from an already high rate. It is clear that the sharp increase in housing prices has meant that households need to take increasingly larger mortgages. Within the commercial real estate sector, demand for both bank- and market-based financing continued to be high. Debt is increasing in relation to the commercial real estate firms' income, more firms are vulnerable, and they are more sensitive to interest rate changes. FI makes the assessment that the high debt levels are making households and firms more vulnerable and sensitive to disruptions than before the pandemic.

The uncertainty in several industries decreased during the year. The banks' credit loss provisions also fell to pre-pandemic levels, and realised credit losses were limited. But risks are also continuing to build up in the commercial real estate sector, where the banks have large exposures. Increased vulnerabilities in the real estate sector indicate that the banks continue to need to hold large capital buffers, and FI has already raised the countercyclical capital buffer.

As of Q3 2021, FI will be applying the EU's so-called banking package in full. This means, for example, that FI will inform the banks what level of own funds is appropriate in excess of the capital requirements (so-called Pillar 2 guidance). This guidance is intended to cover risks, or aspects of risks, and stressed situations that are not already covered by the capital requirements. The capital requirements also increased slightly under the banking package. FI makes the assessment that the banks continued to have satisfactory resilience and sufficient capital buffers to

absorb losses and continue to issue credit even if economic conditions were to deteriorate.

Problems with maturity imbalances and market liquidity

Banks fund themselves to a large extent with debt that has a shorter maturity than their assets. This is a natural part of banks' business models, but the imbalance should not grow too wide. The liquidity requirements on banks were tightened after the financial crisis, and the banks therefore entered the pandemic with significantly higher resilience than they had before. A sharp increase in deposits during the pandemic decreased their dependence on market funding, but the inflow of deposits will probably taper off as the economy normalizes and quantitative easing decreases. Therefore, the banks' funding is considered overall to be unchanged and stable.

Commercial real estate firms also have a need to regularly refinance parts of their debt portfolio. They have become more dependent on the bond market for both short-term and long-term financing. Shocks to this market can therefore quickly have an impact on their financing. If risk-taking among investors decreases, it can become more expensive and more difficult for commercial real estate firms to finance themselves on the bond market. This applies in particular for the companies with lower credit ratings.

The corporate bond market demonstrated sharply reduced functionality in the spring of 2020, for example poor liquidity and highly uncertain pricing. Even though it normalized after the crisis phase had passed, the Swedish corporate bond market continues to have low market liquidity. In the presence of renewed stress on the financial markets, trading securities and issuing new financing may become difficult once again. This creates a vulnerability for the participants dependent on the market, both issuers and investors. There is therefore a need for additional measures to create a more functional corporate bond market with higher resilience.

A large portion of the participants on the corporate bond market is funds that offer daily redemption. They are therefore dependent on being able to turn assets into cash on short notice. If many funds are selling similar assets at the same time, this could amplify price fluctuations and thus give rise to contagion effects. This is particularly relevant on markets with low liquidity. FI takes the position, therefore, that Swedish fund management companies need to be better at considering their assets' liquidity and managing their liquidity risks. This management should be adapted so redemption can occur both in normal times and following the sudden appearance of a financial stress. FI will also follow up on these liquidity risks in its own stress test.

Concentration and interconnectivity increase vulnerability in the financial system

The financial system is characterised by not only concentration but also interconnectivity. Concentration means that systemically important financial services are provided by only a few banks, life insurance undertakings, occupational pension undertakings and infrastructure companies. Financial firms also share an interconnectivity in, for example, financing, investments, and the exchange of systemically important services. This means that problems at one participant can quickly spread to other participants, and this could have a major impact on the functionality of the financial system. This interconnectivity in the Swedish financial system therefore contributes to its vulnerability.

Concentration risks can also arise through large exposures to individual sectors and counterparty risks. The commercial real estate market represents both a majority of the banks' lending to corporates in Sweden and a large share of the total lending on the Swedish corporate bond market. If the sector were to experience problems, this could impact both banks and other lenders in their role as investors in the commercial real estate firms' shares and bonds. FI therefore makes the assessment that the financial system's concentration to the commercial real estate sector is a clear vulnerability. This concentration risk continued to increase during the pandemic. Potential structural changes as a result of new work and consumption patterns after the pandemic are also contributing to elevated uncertainty about the outlook for the commercial real estate market.

Another concentration that is increasing is the exposure of both households and insurance undertakings to the stock market. FI makes the assessment that life insurance undertakings and occupational pension undertakings have satisfactory buffers to handle even large falls in share prices without enhancing market fluctuations through large sell-offs. Household wealth could drop significantly if share prices fall, which could result in households increasing their saving and thus reducing their consumption.

Risks and vulnerabilities linked to cyber attacks are increasing. The number of attacks is rising, as is their scope. The interconnectivity of the financial system increases the vulnerability to cyber attacks. An incident at a systemically important market participant could rapidly have consequences for the rest of the financial system. It is therefore important to continue to strengthen the preventive measures combating cyber attacks. Together with Sveriges Riksbank FI started a project to develop a cyber security strategy for the Swedish financial sector. This strategy, which will be developed under the auspices of the Financial Stability Board, will also involve the national cyber security centre, other affected authorities and representatives for the financial sector in Sweden.

Concentration and interconnectivity are phenomena that are difficult to avoid and change slowly over time. FI is therefore focusing primarily on ensuring that systemically important actors and markets are sufficiently resilient to be able to manage disruptions without too much of an impact.

State of the economy

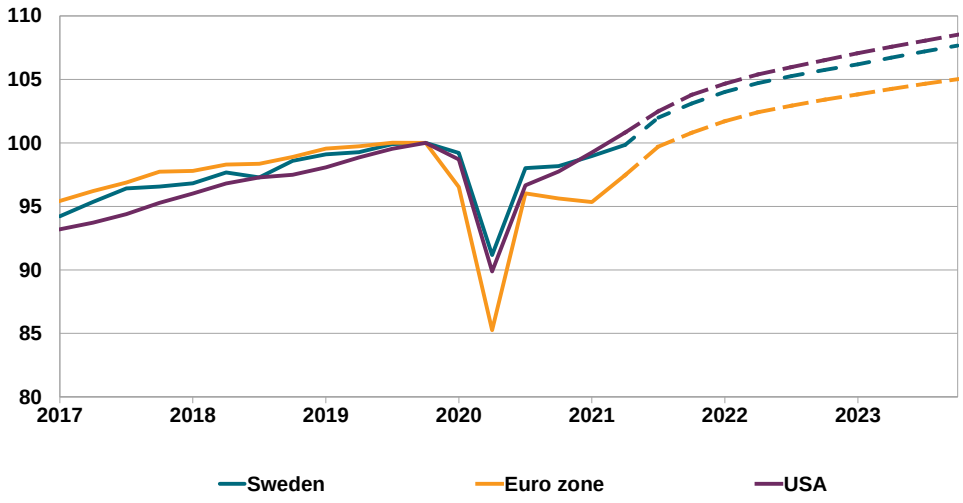
Both the Swedish and the global economies have taken huge strides forward in their economic recovery. However, the increase in public debt in many countries in the wake of the pandemic is a vulnerability. In the short term, inflation is also causing uncertainty.

Clear global recovery

The global economy continues to recover and is expected to grow by 5.9 and 4.9 per cent, respectively, in 2021 and 2022[1], even if new waves of infection and virus mutations are still contributing some uncertainty. This strong recovery should be viewed against the background of the economic shock that hit the global economy during the first half of 2020. Even if growth numbers are currently high, it will take time to recover the production losses from 2020 (Diagram 1). The expectation is that the EU will return to its pre-pandemic GDP level first in 2022. The USA reached this level already in Q2 2021.

1. Clear economic recovery

Index, Q4 2019=100



Sources: NIER (Sweden) and Sveriges Riksbank (Euro zone and USA).
Note: GDP growth. Fixed prices, seasonally adjusted data. Dashed lines refer to the forecast horizon. Forecasts from September 2021.

The extensive fiscal and monetary policy measures were crucial for the stabilisation of the situation during the acute period of the crisis and the following economic recovery. But it is also clear that this approach has been costly and resulted in an increase in public debt. This means that some of the costs for the pandemic have been deferred to the future, and the economic after-effects will be

[1] IMF World Economic Outlook October 2021.

tangible for a long time, thereby effectively diminishing the flexibility to manage future crises. As demand in the global economy has now begun to pick up, countries have begun to wind down their crisis programs. The focus is moving to structural investments that will support the recovery. The EU will invest EUR 750 billion in the next five years to strengthen the recovery. The USA has initiated a large investment in infrastructure with a similar purpose.

The banking system in the EU has emerged from the pandemic relatively unscathed, and profitability has begun to improve. At the same time, there continue to be structural problems with low profitability and a high share of non-performing loans. Rising debt during the pandemic means greater risk for the banks. This can make them more vulnerable to shocks.

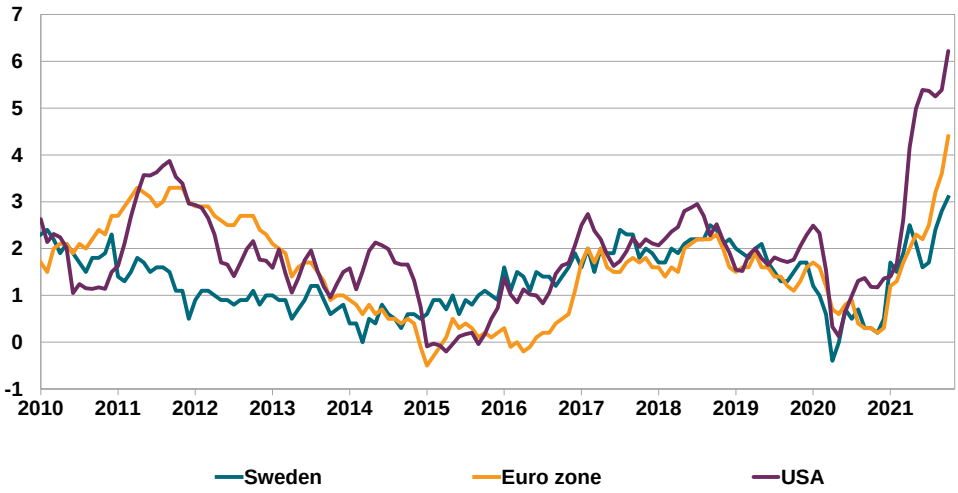
The turbulence in the highly indebted Chinese real estate sector will require a delicate balancing act going forward. The real estate sector in China, which represents around 30 per cent of the country's GDP, must be cooled down without this causing excessive contagion effects in the financial system.

Countries that borrowed more during the pandemic have also become more sensitive to increases in interest rates. Higher interest rates also lead to rising financing costs for households and corporates, which could slow the economic recovery. Furthermore, higher interest rates probably also mean lower valuations on financial assets and real estate. This can create uncertainty on the financial markets. In 2021, inflation increased in several large economies, in part due to rising energy and commodity prices. In October, inflation was 4.4 per cent in the euro zone and 6.2 per cent in the USA (Diagram 2). Inflation expectations also increased rapidly. If inflation were to remain at high levels, this would force central banks to quickly change the direction of their monetary policy, from very expansive to restrictive. This could lead to significant changes in market rates and risk premiums as well as turbulence on financial markets.

So far, higher inflation has impacted international market rates on shorter maturities, and they have increased. After an upswing at the beginning of the year, however, the rate on 10-year government bonds levelled out. The ongoing quantitative easing on the bond markets is also affecting pricing. Therefore, market rates may be lower than normal. The uncertainty surrounding future interest rates has increased.

2. Rising inflation

Per cent



Source: Refinitiv Datastream.
Note: Refers to CPIF (Sweden), HCIP (Euro zone) and CPI (USA), annual change.

Quick recovery in Sweden

The Swedish economy developed rapidly during the pandemic compared to many other countries. In Q2 2021, GDP returned to pre-crisis levels. Public sector costs for economic measures related to the crisis were relatively limited, and public finances are in good shape. As a share of GDP, public debt is expected to be back at the 2019 level of 35 per cent in 2022. The temporary fiscal crisis measures are being withdrawn, but fiscal policy continues to be expansive. The budget for 2022 contains reforms of SEK 74 billion. In the commercial sector, exports demonstrated the clearest recovery as a result of higher global demand for industrial goods and commodities. Household income has been strengthened as demand for labour once again increased, but unemployment is still high.

Monetary policy also continues to be expansive. Quantitative easing by the Riksbank is leading to lower interest rates and financing costs. Lending rates for household mortgages decreased, and the rate at which lending is increasing continued to rise. Housing prices also increased noticeably at the same time, but rising housing prices during the pandemic is not just a Swedish phenomenon. Housing prices have been rising rapidly in other countries as well (see “In-depth analysis – Housing prices also increased in other countries”).

In-depth Analysis – Housing prices also increased in other countries

Despite the pandemic, housing prices continued to increase in many countries. In all OECD countries where such data is available, real housing prices were higher in Q2 2021 than they were in Q4 2019.[2] In 82 per cent of the countries, the increase was greater than 5 per cent, and in 55 per cent of the countries, the increase was greater than 10 per cent.

Housing prices in our neighbouring countries in Scandinavia increased sharply, just like they did in Sweden (Table 1). The forces pushing prices upward are roughly the same as in Sweden, such as very low interest rates, decreased consumption during the pandemic, and a desire to allocate a larger share of income to housing.

Prices have been increasing sharply since before the pandemic

Per cent

	Denmark	Norway	Sweden
Single-family homes	15.5	15.3	25.8
Tenant-owned apartments (freehold apartments in Denmark)	18.2	13.3	11.0

Sources: Statistics Denmark, Statistics Sweden and Valueguard.
Note: Seasonally adjusted data. Time comparisons: End of Q4 2019 compared to end of Q3 2021, for Denmark the end of August 2021. In Norway and Sweden, the price index only includes the existing home market. In Denmark, the price index includes both the existing home market and the new production market, with a slightly lag after the sale of new production.

In the long term, rising housing prices lead to faster growth in mortgages. This has been the case in Sweden (see “Households”). Household mortgages also grew faster in Denmark and Norway.

[2] Based on thirty-three of the OECD’s thirty-eight member countries since data is missing for five countries.

Households

During the summer and autumn, the increase in prices on the residential housing market slowed. During the same period, household debt increased more rapidly. Households' total income and savings improved, but high expectations on housing prices and the economic development, combined with households' large balance sheets, can make households vulnerable to shocks.

	Level	Change
Debt		↗
Cash flow		→
Liquid assets		→

The colors indicate the current level of vulnerability. Green represents low vulnerability. Yellow, orange and red indicate differing degrees of elevated vulnerability. The arrows show the trend for the vulnerability – increasing, decreasing, or unchanged. The level and trend are based on a combination of quantitative measurements and expert assessments.

Household loans are growing faster

Like the economy at large, the situation for households continued to improve over the past six months. Households' outlook for the future also became more positive, especially for the economy at large. Since the start of the second quarter, expectations were higher than normal for the first time since the end of 2018.[3] At the same time as the development as a whole has improved, the impact on individual households has varied significantly throughout the pandemic. Some groups experienced a loss in income. Other did not experience economic difficulties while at the same time benefiting from the broad support measures that were implemented.[4]

It is evident in the development on the housing market that there are large groups of households that were not heavily impacted by the economic downturn. After an initial downturn in March and April 2020, prices on the housing market increased rapidly until the summer of 2021. In October 2021, prices were 11 per cent higher than in the corresponding month in 2020 and 19 per cent higher than the month before the pandemic broke out. Growth has slowed in recent months, and prices

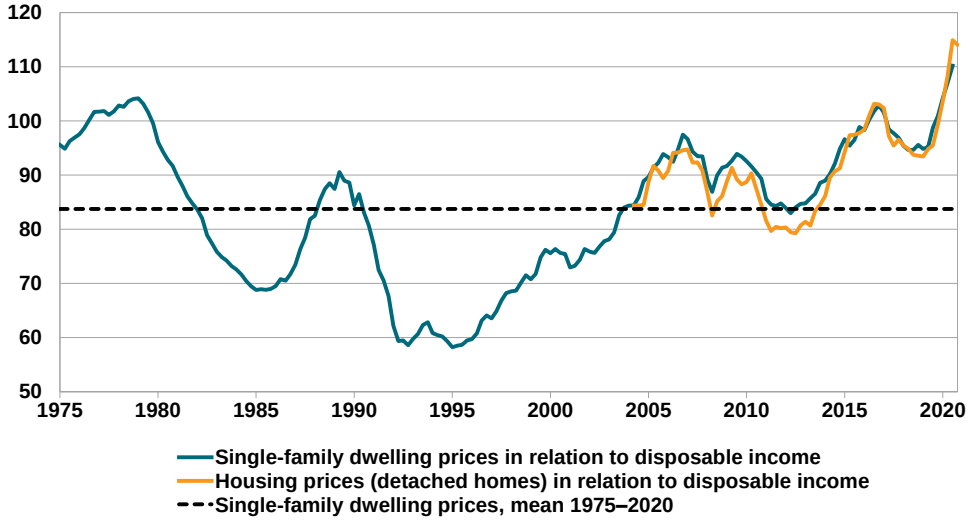
[3] See Economic Tendency Survey, October 2021.
[4] See, for example, *Hur har Covid-19-pandemin påverkat skatteintäkter och arbetsinkomster?* (English translation: How has the COVID-19 pandemic impacted tax revenue and earned income?). Swedish Tax Agency, June 2021.

stabilised at relatively high levels. Since June, housing prices have increased by 1 per cent.[5]

Over time, housing prices are normally influenced by, for example, household income and mortgage rates. During the past year, however, housing prices increased rapidly without mortgage rates changing significantly. For households that bought a home in 2020, average disposable income increased.[6] However, disposable income for all households was lower, and it was first in Q2 2021 that it recovered to the level from the beginning of 2020. Housing prices in relation to all households' income are therefore at levels that are the highest observed since 1975 (Diagram 3).

3. Housing prices growing faster than income

Index 100 = 1980



Sources: Valueguard and Statistics Sweden.
Note: The series Housing Prices (detached homes) refers to Valueguard's index HOX Villor and Single-family Dwellings refers to Statistics Sweden's Real Estate Price Index for one- or two-dwelling buildings (FASTPI).

Over the past year, consumption of some goods and services was low due to restrictions and the state of the economy. This has meant that households were able to spend more of their income on housing. Many households have also been working from home, which probably contributed to an increase in demand for larger homes. The increasing number of households that want larger housing also reflects how prices for different types of housing changed during the past year. The largest increase in prices was for single-family homes, followed by large apartments, while the prices for small apartments demonstrated slower growth. Since the upswing in prices in the summer of 2020, households' expectations on

[5] Refers to seasonally adjusted HOX Sverige.
[6] See *The Swedish Mortgage Market*, March 2021, FI.

housing prices has been at higher levels than normal. If demand on the housing market is being driven by expectations of higher housing prices, there is a greater risk of a larger correction. If, for example, price expectations fall, fewer households want a larger home, or interest rates, and thus housing costs, increase rapidly, this could trigger a drop in prices.

When housing prices increase, mortgages tend to grow faster, with a slight delay. In September, household debt grew by 6.7 per cent. This is 1.3 percentage points faster than the growth at the beginning of 2020. The growth rate increased slowly in 2020, but it has picked up speed in recent months. Because housing prices are at clearly higher levels than before, the growth rate in mortgages may continue to rise.

Interest payments may increase rapidly

Households' total debt in relation to income is significantly higher than before. Despite higher debt and weak growth in income, the low interest rates helped keep the aggregate interest-to-income ratio[7] at low levels (Diagram 4). According to the most recent mortgage survey, most households that take out a new mortgage have good margins for servicing their loans.[8] Since then, some banks lowered the interest rates they use in their credit assessments. This may mean that households are taking larger loans with lower margins, thus reducing their resilience.[9]

The combination of steadily increasing debt-to-income ratio[10] and short fixed-interest periods means that the interest-to-income ratio could increase rapidly if interest rates were to rise. Because interest rates are low, small changes can have a major impact on the aggregate interest expenses. In recent years, mortgage rates with longer fixed-interest periods have fallen more than variable rates. At the same time, more households have also chosen a fixed rate, primarily for periods shorter than five years. Because more households have fixed rates, it will take longer for changes to the interest rates to impact the households' cash flow, which increases the resilience to rising interest rates.

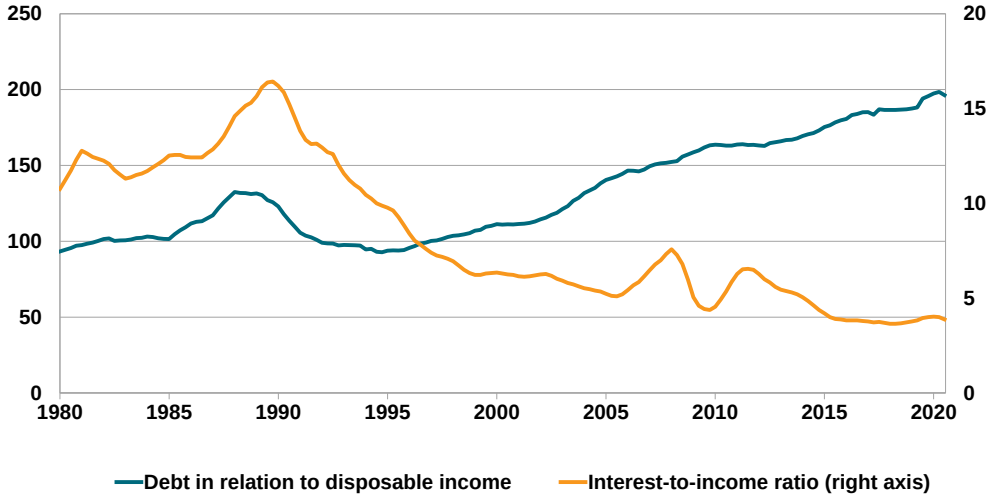
In September, FI allowed the temporary general exemption from the amortisation requirement to expire. This means larger mortgage payments for households that previously were granted exemption. However, the exemption has not had a direct

[7] The interest-to-income ratio measures interest payments as a share of disposable income.
[8] See "The Swedish Housing Market", March 2021, FI. An English translation is available at www.fi.se. The report analyses the mortgages taken during a two-week period in September and October 2020.
[9] Even if an isolated reduction in the rate used in the calculation results in an increase in how much a household with a given income may borrow, other changes in their credit assessment may counteract the impact of such a lowered rate.
[10] The debt-to-income ratio measures debt as a share of disposable income.

impact on the banks' credit assessment or households' borrowing capacity. Since the exemption possibility was also temporary, the transition is expected to have a limited effect on both new lending and housing prices.[11]

4. Higher debt but relatively low interest payments

Per cent



Source: Statistics Sweden.
Note: The interest-to-income ratio refers to the households' total interest expenses divided by their disposable income. The most recent data point is Q2 2021.

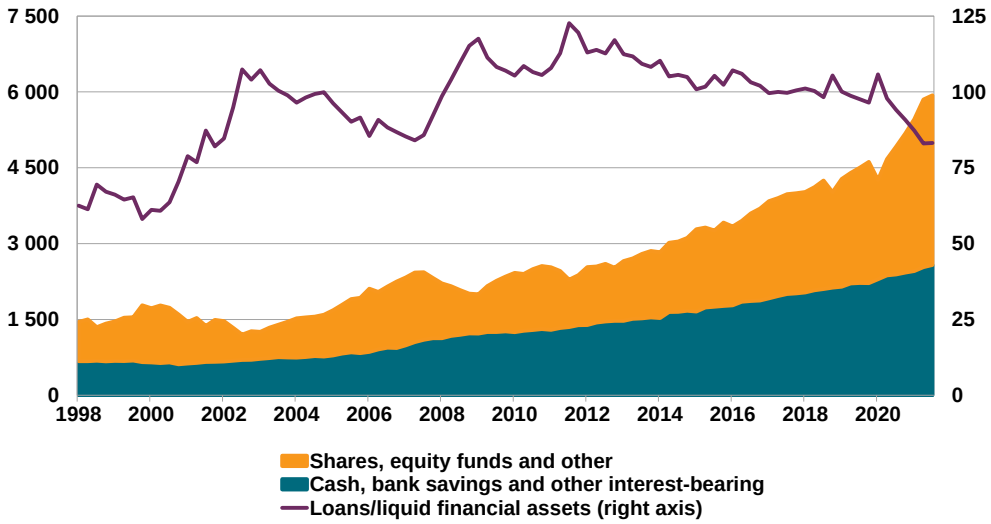
Household wealth is continuing to rise

Swedish households' aggregate savings have increased over a long period of time, and the households savings ratio[12] has continued to increase over the past few quarters. The high level of savings and strong development in the value of financial assets mean that households' aggregate liquid financial wealth has improved rapidly. Rapidly rising prices on risky assets means that Swedish households' liquid financial wealth has become more concentrated in assets with higher risk despite high inflows into bank accounts. At the end of Q2 and Q3 2021, the share of liquid assets with high risk was 57 per cent (Diagram 5).[13] This is the highest share since 2007 and makes households more sensitive to falling asset prices.

[11] According to the amortisation regulations, banks may still grant temporary exemption from the amortisation requirements to households that experience a loss of income.
[12] Aggregate savings in relation to aggregate income.
[13] Higher risk refers here to directly owned listed shares, equity funds, other funds, and foreign-registered funds. Some bonds and fixed-income funds also have higher risk, but it is not possible to categorise them by their risk level using available data. Unlisted share holdings are a large part of households' financial wealth but as a rule are an illiquid asset.

5. Households' liquid assets are increasing

SEK billion
Per cent



Source: Savings Barometer, Statistics Sweden.
Note: *Shares, equity funds and other* includes funds registered in Sweden that are classed as neither equity funds nor fixed-income funds and the entire holding of funds registered abroad. *Cash, bank savings, and other interest-bearing* includes households' bond holdings and fixed-income funds.

Growth in households' liquid assets is positive from a resilience perspective since these assets are one of the households' most important buffers for managing shocks. However, the degree to which an increase in aggregate savings and net wealth contributes to greater resilience depends on how they are distributed. Previously, households' liquid assets have been unevenly distributed.[14] There are grounds for assuming that this is still the case and that wealth distribution is skewed.[15] Without detailed data of assets, though, it is hard to follow any trends. FI has developed a method to estimate the distribution of assets using the distribution at the time Sweden stopped gathering asset data. Based on this distribution, many highly indebted new mortgagors would experience negative wealth following a large drop in asset prices (see "In-depth analysis – Many new mortgagors may have small holdings of liquid assets").

[14] See Andersson and Vestman (2021) "Svenska hushålls likvida tillgångar", FI Analysis 28, FI. A summary is available in English at www.fi.se.
[15] The uneven distribution still applies to savings in shares, for example. According to Statistic Sweden's Shareholder Statistics, just under 12 per cent in Sweden have a portfolio of shares. Among them, the average portfolio is around SEK 1 million, while the median is approximately SEK 50,000.

In-depth Analysis – Many new mortgagors may have small holdings of liquid assets

Sweden stopped gathering data on individual households' assets after 2007. To at least get a general idea for households' assets, FI developed a method to estimate how the assets are distributed. This method is based on the historic distribution for individuals in various age groups, income deciles and interest expense intervals. [16] After adjusting for the assets' total development, we can then analyse households' balance sheets – assets, liabilities and net wealth – and how they can be affected by various economic shocks.[17]

The calculations are based on new mortgagors from 2020 and the information FI has on income, mortgages and housing values. We find major differences in both bank savings and other liquid financial assets. Almost one-third of new mortgagors are estimated to have bank savings of less than SEK 10,000, and almost half have less than SEK 10,000 in other liquid financial assets (Table 1). At the same time, there are new mortgagors that have very large assets.

Tabell 1. Estimated liquid assets by loan-to-value ratio

	Loan-to-value ratio			
	0-50	**50-70**	**70-85**	**85+**
Share of new mortgagors (per cent)	24.3	25.9	44.9	5.0
Share of all mortgagors (per cent)	52.9	26.8	18.0	2.3
Panel A: Bank account holdings (estimated)				
Share with less than SEK 10,000 (per cent)	28	30	36	38
Average among others (SEK million)	0.55	0.44	0.36	0.42
Median among others (SEK million)	0.21	0.15	0.12	0.11
Panel B: Other liquid financial assets (estimated)				
Share with less than SEK 10,000 (per cent)	41	46	52	54
Average among others (SEK million)	1.10	0.80	0.71	0.59
Median among others (SEK million)	0.43	0.29	0.24	0.21

Sources: FI and Statistics Sweden.
Note: "Average among others" and "Median among others" refer to those who have more than SEK 10,000 in bank account balances and other liquid financial assets.

Households with small holdings of liquid assets are harder hit in an economic downturn. The estimates show that bank savings are higher for borrowers with low loan-to-value ratios. This is probably because these households are often older

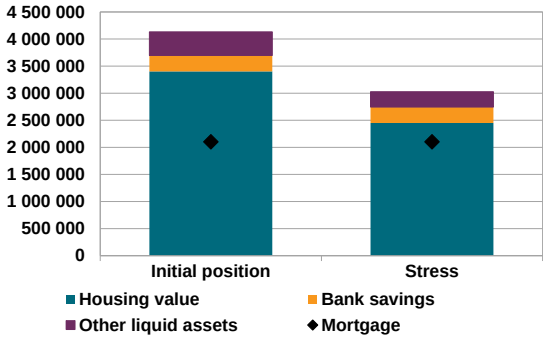
[16] See Appendix 2 of Andersson and Vestman (2021), "Svenska hushålls likvida tillgångar", FI Analysis 28, FI. A summary is available in English at www.fi.se.
[17] Households' cash and deposits increased by 66 per cent between Q4 2012 and Q3 2020, the quarter when the most recent mortgage survey was conducted. Listed shares, bonds and funds increased by 128 per cent during this period. We allow the estimated assets to grow by the corresponding percentages to extrapolate the holdings from 2012 to 2020 for new mortgagors.

and have a combination of high income and relatively low interest expenses. We find a similar difference in other liquid financial assets between households with different loan-to-value ratios. The estimates also show that the distribution of liquid assets between different groups is positively skewed, with the average value in all groups being significantly higher than the median. This means that many households may have small holdings of assets even if the aggregate financial wealth is large. It is therefore important to follow how the distribution of assets develops to understand how households' resilience changes as aggregate wealth grows.

Households with liquid assets have a better possibility of managing shocks such as a loss of income or falling housing prices. Diagram 6 shows new mortgagors' average net wealth – their assets minus their loans. In a hypothetical stressed scenario, we assume that housing prices fall by 28 per cent and the value of other liquid financial assets by 35 per cent.[18] We allow bank holdings to remain the same. Even if households' balance sheets are stronger when we consider estimates of their liquid assets, many households' wealth falls sharply in such a stressed scenario.

6. Balance sheets in initial position and during stress

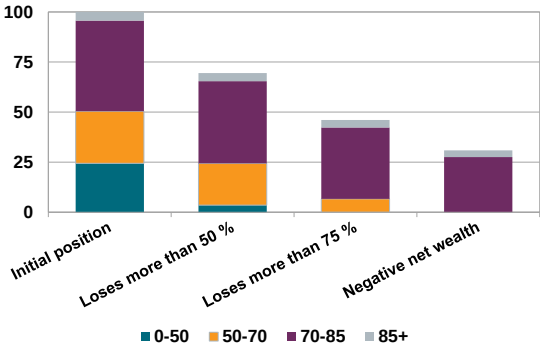
SEK



Sources: FI and Statistics Sweden.
Note: The bars show the average housing prices, bank savings and other liquid assets at outset and under stress. The difference between the bar and the parallelogram is the net wealth.

7. Many new borrowers lose a large portion of their net wealth

Percentage



Sources: FI and Statistics Sweden.
Note: The height of the bars shows the percentage of new mortgagors that given the stress would lose the stated portion of their net wealth. The colours of the bars shows the original loan-to-value ratio. The percentages are based on actual housing prices and loans and estimated liquid assets.

Almost three-fourths would lose more than 50 per cent of their net wealth, and approximately one-third would experience negative net wealth (Diagram 7). Since housing prices fall sharply in the scenario, liquid savings may be the difference between positive or negative net wealth for some mortgagors. Approximately one-

[18] The scenario is based on ESRB's three-year scenario that was used for the EBA's stress test in 2021.

fifth of the new mortgagors have a home that is valued lower than the mortgage but still have positive net wealth thanks to their liquid savings.

In a stressed scenario, net wealth decreases percentually most for those with loan-to-value ratios above 85 per cent. Almost all of these borrowers would lose their entire net wealth and thus have loans that are larger than their assets (negative equity). In the group with loan-to-value ratios between 70 and 85 per cent, which includes most new mortgagors, more than half would lose all of their net wealth. The decrease is larger in SEK for households with low loan-to-value ratios, which are mortgagors with large balance sheets but relatively small loans. This greater wealth and lower leverage means that the wealth decreases less percentually, but there are mortgagors that would lose more than half of their net wealth, even among those with low loan-to-value ratios.

Non-financial corporations

Non-financial corporations are clearly recovering, but they have large liabilities, which continued to increase during the pandemic. Commercial real estate (CRE) firms' liabilities increased sharply throughout the pandemic, which has made them more vulnerable to shocks. There is also uncertainty surrounding changes in working and consumption behaviour after the pandemic, which could have an impact on CRE firms. Problems for CRE firms could have a major impact on banks, bond markets, and funds, and thus even impact financial stability.

	Level	Change
Debt growth		↗
Indebtedness		↗
Refinancing		→

The colors indicate the current level of vulnerability. Green represents low vulnerability. Yellow, orange and red indicate differing degrees of elevated vulnerability. The arrows show the trend for the vulnerability – increasing, decreasing, or unchanged. The level and trend are based on a combination of quantitative measurements and expert assessments.

Clear recovery but continued uncertainty

Revenues fell significantly for many non-financial corporations at the beginning of the pandemic, which made it more difficult for them to service the interest and amortisation on their loans. Bankruptcies have not increased during the pandemic, though, which can be linked in part to extensive support from the government. In general, the corporations' turnover improved significantly since the spring of 2020.[19]

The extensive support the state provided during the pandemic has been of particular importance for some corporations and industries. These corporations could experience payment difficulties when support measures are withdrawn, which could lead to higher credit losses for banks. But the economy is clearly recovering. Therefore, the effect will probably also be limited when the measures are now gradually phased out (see "Lower credit losses in lending to corporates" in "Stability in the banking sector").

There is also uncertainty about whether the pandemic may lead to structural changes, and new working and consumption patterns could cause problems for some industries – for example commercial real estate. The combination of high real

[19] Statistics Sweden. Their turnover was 8 per cent higher in H1 2021 compared to H1 2020.

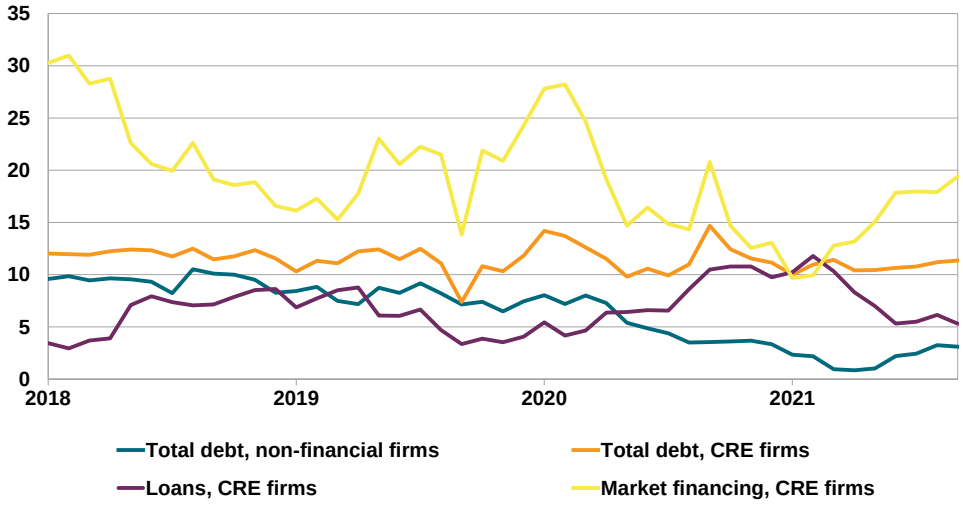
estate prices and a risk of weaker demand for some types of premises means that the risks of falling prices and lower revenue in the real estate sector are elevated.

CRE firms' debt continues to rise rapidly

Increasing corporate debt means increasing risks to financial stability. The debt of non-financial corporations grew at a slower rate in 2020 and 2021 (Diagram 8). This rate of growth is still lower than it was before the pandemic, even though it has increased slightly since bottoming out at the beginning of 2021. Corporate debt in relation to GDP, though, is historically high.

8. Commercial real estate firms' debt grew throughout the pandemic

Annual percentage change



Source: Statistics Sweden.

Note: "Total debt, non-financial corporations" refers to loans to non-financial corporations from monetary financial institutions (MFI) according to statistics on the financial market (Statistics Sweden) and non-financial corporations' issued bonds and commercial paper according to issued securities statistics (Statistics Sweden). "Loans, real estate" refers to loans from MFI to non-financial corporations according to financial market statistics (Statistics Sweden) where the loan is collateralised by multi-dwelling buildings and other properties, but not tenant-owner associations. "Market financing, real estate" refers to bonds and commercial paper issued by firms within the CRE sector according to issued securities statistics (Statistics Sweden).

The debt of CRE firms is particularly important to follow since the sector is closely linked to the financial sector; it has often played an important role in financial crises. The debt of CRE firms has increased throughout the entire pandemic and is continuing to increase at a rapid pace. Low interest rates and the Riksbank's quantitative easing have contributed to this. This rapid increase in the CRE firms' debt means that FI considers the vulnerabilities related to the growth in the debt of non-financial corporations to have increased (see "In-depth analysis – CRE firms are more vulnerable").

Increase in risks associated with the debt of CRE firms

CRE firms have large and increasing debt in relation to their cash flow, but so far they have handled the stress during the pandemic relatively well. Vacancy rates have increased and rents fallen for some segments, but this has not impacted earnings to any major extent in the real estate sector as a whole.

The interest coverage ratio[20] of CRE firms is high, due in part to low financing costs. Despite these low financing costs, FI assesses the percentage of real estate lending with an elevated credit risk to have increased from 5 to 9 per cent between 2019 and 2020. FI's stress test also shows that CRE firms have become more vulnerable to higher financing costs and lower earnings during the pandemic (see "In-depth analysis – CRE firms are more vulnerable"). This also means that the banks' credit losses in the stress test will be larger in 2020 than they were in 2019. The difference is large enough that even if the banks, following FI's decision to raise the capital add-ons in 2020, hold more capital related to real estate exposures, the losses are increasing more than in the stress tests. This confirms the need for the capital add-on that FI decided on in 2020 and the importance of the capital buffers that FI sets. In 2021, the economy improved, but at the same time liabilities continued to increase, which can offset the effect. Increasing vulnerability in the real estate sector also means that measures to increase resilience in the corporate bond and fund sector become even more important (see "Stability in the financial markets").

There are several ways that CRE firms may experience an increase in financing costs. Rising interest rates following higher inflation, for example, could lead to higher financing costs. Higher risk premiums, for example due to a general decrease in risk appetite or due to impaired profitability in the real estate sector, could also apply upward pressure on financing costs.

Ownership concentration has increased in the real estate sector in the past few years. Some CRE firms have also bought shareholdings in other CRE firms. Higher ownership concentration and increased cross-ownership can make the real estate sector more vulnerable. A more concentrated sector means fewer, larger actors. This, in turn, means that there can be a greater impact if one firm experiences problems. Cross-ownership within the sector is also problematic in that problems at one firm can easily spread to other similar actors.

[20] "Interest coverage ratio" refers to the net operating income, i.e. rental income minus operating expenses, divided by the interest expense. The interest coverage ratio measures a firm's ability to make its interest payments.

CRE firms increasingly dependent on corporate bonds

In Q2 2020, many non-financial corporations found it more difficult or significantly more difficult than normal to raise financing. This situation has now improved, and the percentage of corporations experiencing problems with financing is basically back to pre-pandemic levels. This is probably due to better access to and a lower need for financing, to a large extent thanks to the implemented support measures.

Most corporations secure their financing with bank loans. Some corporations, primarily those in commercial real estate, are increasingly raising financing more through bonds with relatively short maturities. Given certain conditions, it can be difficult or significantly more expensive to issue new bonds – which happened in the spring of 2020. Corporations may then need to replace the bonds that fall due with bank loans. In the spring of 2020, the banks were able to meet this need. But if banks find it difficult to meet the corporations' need for credit, this could create a negative spiral with both rapidly rising financing costs and falling prices on assets that are also used as collateral for bank loans. Large and unstable financing via corporate bonds combined with growing credit losses at the banks therefore could create problems for financial stability. As a result, FI makes the assessment that the commercial real estate market is one of the most important vulnerabilities in the financial system.

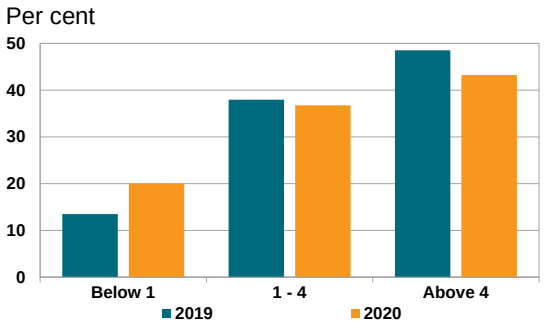
In-depth Analysis – CRE firms are more vulnerable

Swedish CRE firms overall have large debt, and their debt increased during the pandemic. Given that the conditions for the real estate sector have become more uncertain due to the pandemic, in part due to altered consumption and working patterns, it is important for FI to continuously assess the vulnerabilities in this sector and what they entail for financial stability. We assess these vulnerabilities here with a stress test. The results show that the CRE firms became more vulnerable to a drop in earnings and higher financing costs between 2019 and 2020. The banks' credit risks to these exposures also increased.

The financial position of CRE firms in general is currently satisfactory. Half of them have an interest coverage ratio exceeding 3.7 per cent. But, at the same time, a larger portion of the banks' loans to the sector go to CRE firms with low interest

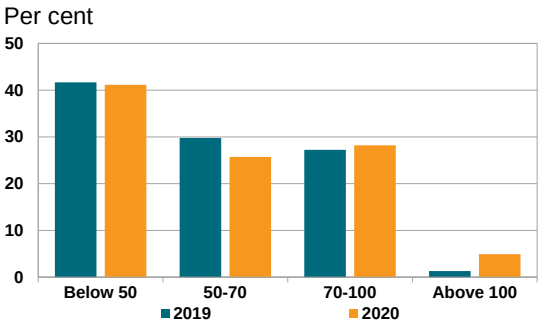
coverage ratios and high loan-to-value ratios (Diagrams 9 and 10). This means that the share of loans to vulnerable CRE firms increased between 2019 and 2020.[21]

9. Share of loans broken down by interest coverage ratios



Source: FI.
Note: The bars for each year add up to 100.

10. Share of loans broken down by loan-to-value ratios



Source: FI.
Note: The bars for each year add up to 100.

We use stress tests to investigate how the banks can be impacted by a shock to the CRE market.[22] The stress test consists of three scenarios. In the first scenario, we assume that earnings from real estate decrease by 25 per cent as a result of structural changes that are causing a decrease in demand for premises such as offices and retail. We assume that earnings from residential properties and community service properties are not impacted. In the second scenario, the firms' interest rates increase by 3 percentage points, and in the third scenario, we combine the first two scenarios.[23] This means that CRE firms in the combined scenario experience both lower earnings and higher financing costs. None of the scenarios consider any measures that the firms or banks may make to mitigate the effects once they have occurred.

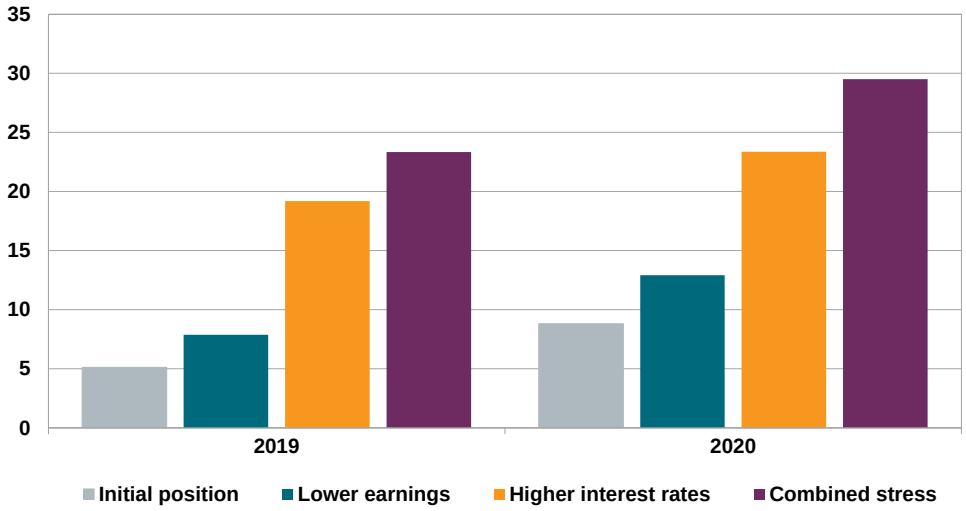
We carried out the same stress test for both 2019 and 2020. The stress test shows that the percentage of loans with high credit risk increase in all scenarios when we compare the results for 2019 and 2020 (Diagram 11). For example, we see that given the combined stress, the share of loans with elevated credit risk increases to almost 30 per cent in 2020 compared to approximately 23 per cent in 2019. Given a shock, there is a risk that a larger share of the CRE firms' loans would be affected

[21] We define CRE firms as vulnerable if they demonstrate an interest coverage ratio of less than 1 and a loan-to-value ratio of more than 70 per cent. It is loans to these firms that constitute an indicator of loans with a high credit risk.
[22] The method is described in more detail in Aranki, Lönnbark and Thell (2020) "Stresstest av bankernas utlåning till fastighetsföretag,", FI Analysis 24, FI. An English translation is available at www.fi.se.
[23] The change in the interest rate is not passed on in full to the firms' financing cost in the stress test since the firms to some extent shield themselves from interest rate fluctuations.

in 2020 compared to 2019. This is largely due to a larger share of loans having elevated risk already at the outset.[24]

11. Increase in share of bank loans to CRE firms with elevated credit risk

Per cent



Source: FI.

Note: The diagram shows the share of banks' loans to CRE firms that have elevated credit risk according to FI's applied definition. The share is shown at the outset, given lower earnings, given higher financing costs, and given a combined stress.

Compared to in 2019, the banks' credit losses in 2020 are higher in all three scenarios (Diagram 12). For 2020, losses are estimated at approximately SEK 10 billion in the scenario with lower earnings, SEK 35 billion in the scenario with higher financing costs, and SEK 55 billion in the combined scenario. At the same time, the banks set aside more capital for these exposures in 2020 than they did in 2019. This is because of FI's capital add-on for bank loans to commercial real estate, which amounted to SEK 14.6 billion in Q4 2020.[25] Excluding the capital add-on, the banks capital requirements were lower in 2020 than in 2019. This is because the countercyclical capital buffer was lowered from 2.5 to 0 in the spring of 2020 to maintain the supply of credit during the pandemic.

The pandemic had a negative impact on earnings for many CRE firms, which impacts the results of the stress tests. Earnings have probably improved for many firms since the most acute phase of the pandemic, but there is still uncertainty regarding earnings. Debt also continued to increase in 2021. It is therefore

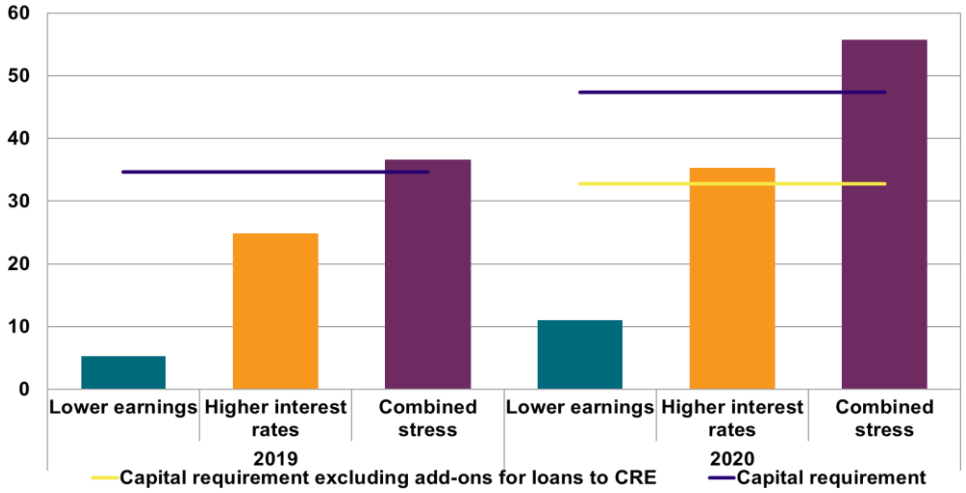
[24] The increase in 2020 in the share of loans to CRE firms that have elevated risk according to FI's definition is consistent with the change in the banks' portfolios. The share of bank loans in IFRS steps 2 and 3 increased to 5.5 per cent in 2020 from 3.9 per cent in 2019.
[25] The capital add-on replaces some earlier capital add-ons, which means that the net add-on is slightly less than SEK 14.6 billion.

uncertain if the situation in the CRE sector has improved since the stress test was conducted.

Overall, the stress tests show that the vulnerability in the CRE sector has increased. Even though the banks set aside more capital for loans to CRE in 2020, our estimated credit losses in the combined scenario are higher than the capital the banks set aside specifically for lending to this sector.[26] This confirms the need for the capital add-on that FI decided on in 2020 and the importance of the capital buffers that FI sets.

12. Credit losses in FI's stress test and the banks' capital requirements

SEK billion



Source: FI.

Note: The bars in the diagram show estimated credit losses, and the lines show the level of the banks' capital requirements. The capital requirement is calculated as the sum of the minimum requirements, buffer requirements and Pillar 2 requirements attributable to credit risks in commercial real estate.

[26] This applies even when we assume the same level of countercyclical buffer for 2020 and 2019, 2.5 per cent.

Stability in the financial markets

Risk-taking in the financial markets continues to be high and driven by some of the support measures. It has become more difficult to trade bonds on the markets for government bonds and covered bonds without influencing the price. This can be because of extensive quantitative easing. The bond markets have thus become more vulnerable.

	Level	Change
Risk-taking financial markets		→
Market liquidity		↗
Financial infrastructure		→

The colors indicate the current level of vulnerability. Green represents low vulnerability. Yellow, orange and red indicate differing degrees of elevated vulnerability. The arrows show the trend for the vulnerability – increasing, decreasing, or unchanged. The level and trend are based on a combination of quantitative measurements and expert assessments.

High risk-taking in the financial markets

There is still high willingness to buy risky assets. During the second half of 2021, prices on the stock markets continued to rise. Share valuations in the form of forward-looking P/E ratios[27], are also above their historical averages. The risk premiums of corporate bonds are now at an all-time low (Diagram 13). This is due in part to improved macroeconomic outlooks but also to the powerful monetary and fiscal policy measures that were implemented in the spring of 2020, which decreased the downside risks in the economic recovery.

The quantitative easing under the current monetary policy also has a direct impact on prices. Over time there is a risk that extensive and long-term quantitative easing will lead to an incorrect valuation of risk on the financial markets and that investors seeking to maintain their returns will take excessive risks.

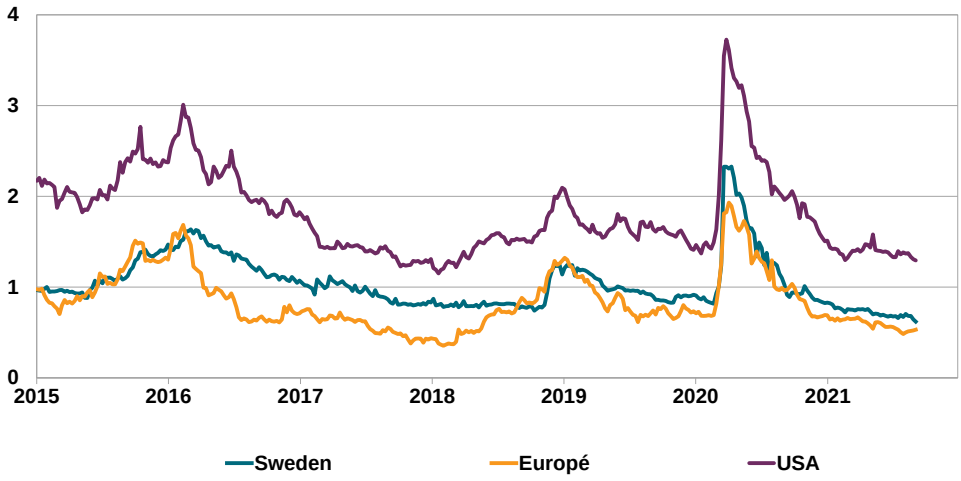
As risk-taking continues to increase and asset prices rise, it is possible that vulnerabilities are building up and the probability of new, more powerful corrections is increasing (see, for example, “In-depth analysis – Commercial real estate firms more vulnerable”). A shock could lead to renewed turbulence, which could cause prices to drop dramatically in many asset classes. If such a fall in prices were to cause financing-related problems for financial and non-financial corporations, or pose a threat to other central functions, this could entail risks to

[27] Share price/earnings per share.

financial stability. In order to prevent quantitative easing from driving excessive risk-taking and a continued increase in asset prices, it should be phased out.

13. Risk premiums are steadily falling

Percentage points



Source: Refinitiv Datastream.

Note: Interest rate differentials for corporate bonds with credit rating BBB in Sweden, the Euro zone and the USA. Calculated as the difference between the Refinitiv corporate benchmark for Sweden, the euro zone and the USA and Refinitiv's interest rate swaps in each respective currency. All with a maturity of 5 years.

Bond market's resilience needs to improve

When the pandemic broke out in the spring of 2020, the bond markets throughout the world experienced problems. In Sweden, the corporate bond market was hit particularly hard, but the markets for government bonds and covered bonds were also impacted. Powerful support measures stabilised the bond markets, and market liquidity initially improved. However, during the summer of 2021, market liquidity in the government bond and covered bond markets decreased again, primarily for covered bonds (Diagram 14).

There are thus signs that the markets are functioning worse than in the spring, even if liquidity improved slightly in September.[28] In part, it has become more difficult for market participants to find a counterparty, and there is less trading. A contributing factor is that there is less volume available for trading. For government bonds, less than half of the outstanding supply of bonds is available in the market. This is primarily due to the Riksbank's quantitative easing. Quantitative easing helped improve market liquidity at the beginning of the

[28] For more information on how FI measures market liquidity on the treasury bond and covered bond markets, see Crosta and Zhang (2020), "Nya likviditetsindikatorer för räntemarknaden", FI Analysis 21, FI. An English translation is available at www.fi.se.

pandemic, but over time the measures have probably instead had the opposite effect.[29] When market liquidity declines, it becomes more difficult to trade bonds without the prices changing significantly. Under stressed market conditions, there is a greater risk of fast and large price fluctuations, which can amplify problems. Since the spring of 2021, the vulnerability in the government bond and covered bond markets has thus increased.

The problems that arose in the market for corporate bonds in the spring of 2020 indicate that the market is very sensitive to shocks. This is in part because the market liquidity is limited and the market is relatively small, even if it has grown in recent years. If the corporate bond market does not function, this could have a negative impact on investors in the market. It could also increase the pressure on the banking sector to provide the firms with financing. In a worst-case scenario, this could amplify economic crises if the banks are not able to increase their lending at the same rate. In order for the corporate bond market not to constitute a risk to financial stability, its functionality must improve. FI makes the assessment that this in part refers to the market liquidity on the secondary market.

FI would like to take steps to strengthen the market's resilience and has initiated measures together with market participants to improve transparency. As a result, market participants, after a transaction, now publish information about prices and volumes to a greater extent than they did before.[30] This, in turn, can create conditions for better market liquidity and price discovery. But additional measures are needed to strengthen the corporate bond market's resilience. In part, more standardised products and a more diversified investor collective could help in this respect. Several of the deficiencies in the market are of such a nature that the market participants should manage them primarily on their own, but FI will continue to maintain a dialogue with the various parties in the market to help strengthen the market.

The Swedish corporate bond market has grown in recent years due to growing interest from Swedish investors to invest in corporate bonds. This is occurring primarily through funds. In the spring of 2020, large withdrawals were made from corporate bond funds, which amplified the problems on the Swedish corporate bond market. In order to prevent the corporate bond market from posing a risk to financial stability, it is important for the funds to be stable and have good liquidity management. If fund management companies are forced in stressed situations to sell assets quickly (so-called fire sales), resulting in additional pressure on prices,

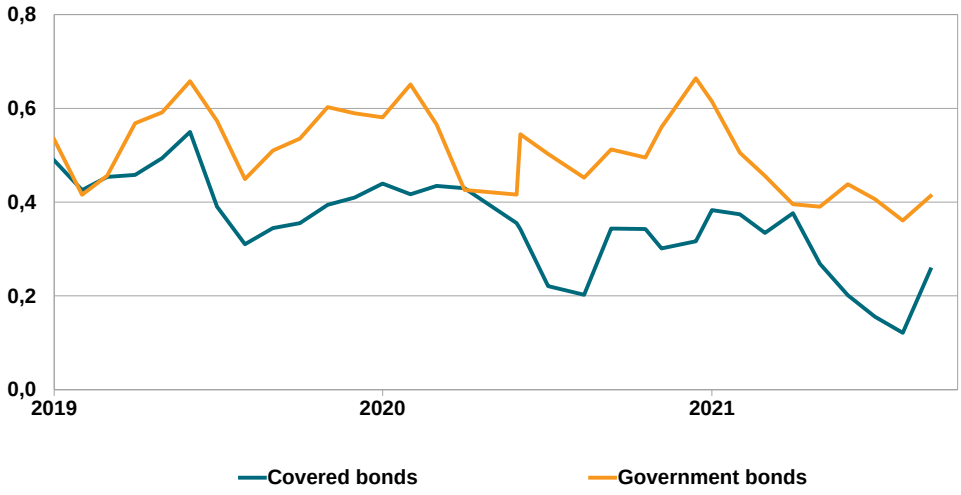
[29] For more information, see Blix Grimaldi M., Crosta A. and Zhang D. (2021) "The Liquidity of the Government Bond Market – What Impact Does Quantitative Easing Have? Evidence from Sweden" Working Paper Series, Sveriges Riksbank.
[30] For more information, see https://svenskvardepappersmarknad.se/svensk-vardepappersmarknad-initierar-daglig-publicering-avseende-transaktioner-pa-obligationsmarknaden/.

this could amplify the problems on the market. Another weakness that could enhance the problems are the liquidity risks arising from funds with daily redemption investing in instruments with limited liquidity. In order to prevent fund management companies from amplifying the problems that can arise on the corporate bond market, the companies need to manage liquidity risks better.

FI has submitted a report to the government presenting its investigation into the need for additional tools for fund management companies to manage liquidity risks on the Swedish fund market. Some tools are already allowed. FI therefore would like to encourage fund managers to use the tools that are available. It is possible that the liquidity in some funds' assets or redemption conditions may need to be adapted. FI has encouraged fund managers to review FI's requirements and recommendations on good risk management in funds and implement measures by 31 December 2021.[31] FI will follow up with observations from its supervision on the liquidity management at individual fund management companies and conduct a stress test of the fund management companies in 2022.

14. Decrease in market liquidity

Normalized scale



Sources: FI's own calculation, Refinitiv Eikon, Swedish National Debt Office and Svenska Handelsbanken Bond Indices.
Note: Liquidity measure as an aggregation of various individual indicators for covered bonds and nominal government bonds with benchmark status. Higher values correspond to higher liquidity. Two months' moving average.

[31] See FI Supervision 22: "Likviditetsriskhantering i fonder", 2021. An English summary is available at www.fi.se.

New conditions place demands on the financial infrastructure

Financial infrastructure consists in part of firms that provide technological systems for payments, settlement of securities transactions and managing of counterparty risks.[32] This infrastructure is central for the functioning of the financial markets and financial stability.

It is very important that the systems are available without disruption. Vulnerabilities in this area are therefore largely linked to the firms' management of operational risks. Technical developments in combination with new international standards and new legislation help keep these issues continuously relevant. Greater risk for cyber attacks make the firms more vulnerable. All financial infrastructure firms must have good governance and control and sound management and evaluation of suppliers of critical services. It is also crucial that the firms have stable IT systems and sufficient staffing. Firms must handle operational risks for both their day-to-day activities and in their plans for continuity and crisis management. This will improve the firms' possibilities for delivering their services in in stressed situations.

The central counterparties that offer counterparty clearing of financial derivatives and some other securities are very important actors in the financial infrastructure. Their primary assignment is to take over counterparty risks by acting as a counterparty to both the seller and the buyer in a financial transaction. The concentration of counterparty risk that arises places high demands on the operations of a central counterparty. The central counterparties have thus come to be considered systemically important.

Around 90 per cent of the interest derivative trade in SEK is cleared by the British central counterparty London Clearing House Ltd (LCH). After Brexit, the UK is now viewed as a third country in relation to the EU. This means that the conditions for cross-border trade in financial services have changed, and thus also the conditions for clearing through LCH. A decision by the European Commission, however, allows participants within the EU to continue to use central counterparties that are already established and authorised, including LCH, until the summer of 2022. What will happen after this date is unclear (see "In-depth analysis – Post-Brexit central counterparty clearing in the UK").

There are also changes under way globally to promote the reliability of benchmarks. The goal is to achieve benchmarks that are based more on actual transactions. The benchmarks serve as a basis for a very large proportion of pricing

[32] Systemically important Swedish infrastructure firms are Bankgirot, which clears mass payments, the central securities depository Euroclear Sweden AB, and the central counterparty Nasdaq Clearing AB.

on the fixed income market and need to be reliable and stable. In terms of the benchmark LIBOR, it will cease publication completely. This means that there are extensive efforts under way to transition to transaction-based benchmarks, which is resulting in increased uncertainty during the transition period (see "In-depth analysis – Benchmark reform and LIBOR").

In-depth Analysis – Post-Brexit central counterparty clearing in the UK

London Clearing House Ltd (LCH) is Europe's largest clearing house and a central counterparty (CCP) in financial instrument trading. Before Brexit, FI warned that one of the single most important consequences for the Swedish financial markets in the short term would be if Swedish firms were no longer able to use LCH. This would have a major impact on Swedish firms' ability to trade interest derivatives, which in turn is important for the Swedish financial markets to function well.[33]

The details in the agreement that the EU countries and the UK reached on how the UK would exit the EU avoided these consequences. The EU regulation on OTC derivatives, central counterparties and trade repositories (EMIR) was amended at the same time. The amendment were made to minimise the risks to the supervision of CCPs in third countries. Before the transition period for Brexit expired, the European Securities and Markets Authority (ESMA), in accordance with the amendments to EMIR, decided that LCH would be classified as a systemically important CCP for the EU. This means that ESMA and the national supervisory authority, the Bank of England, will directly supervise LCH. The European Commission also made a temporary decision that CCPs in the UK may continue to provide their services to clearing members within the EU. Both ESMA's and the European Commission's decisions apply for 18 months and expire on 30 June 2022.

During the period ending 30 June 2020, ESMA[34] must conduct an extensive review of LCH and its clearing services' systemic importance for the EU. The objective of the review is to determine if LCH in its entirety, or any of its clearing services broken down by currency, is of such substantial systemic importance that it is not possible to sufficiently manage the risks to financial stability within the EU.

If market participants within the EU may no longer use LCH, they would need another CCP for clearing. However, there is no requirement on where the new CCP must be located, which means there is a risk that the clearing will move to an approved CCP in another third country, for example the USA. If the operations must move or if the operations move to different CCPs, this will cause a forced fragmentation, which in turn could lead to impaired market liquidity in systemically important markets. The economies of scale associated with clearing would also not

[33] For more information, see https://www.fi.se/sv/publicerat/nyheter/2018/brexit-och-konsekvenser-for-svenska-foretags-clearing/.
[34] Through its supervisory committee and its supervisory board for CCPs.

be fully utilised, which would increase costs for firms and, by extension, even consumers.

The regulatory framework around the supervision of CCPs located in a third country is already updated and extensive. FI has made the assessment that LCH is a systemically important CCP for Sweden and takes a positive view on the current arrangement, where ESMA shares supervisory responsibility with the Bank of England.

If its review leads to an assessment that LCH's systemic importance is of such a magnitude that the risks cannot be fully managed, ESMA must submit a recommendation to the European Commission. ESMA will only submit a recommendation if it considers the European Commission should approve LCH for the provision of some clearing services to firms within the EU. ESMA must make its assessment in collaboration with the European Systemic Risk Board (ESRB) and following the agreement (approval) of central banks. FI is a voting member of ESMA and ESRB. Thus, FI is actively participating in this work, which is very important for both Sweden and the rest of the EU.

In-depth Analysis – Benchmark reform and LIBOR

In March 2021, the Financial Conduct Authority (FCA), the supervisory authority in the UK, confirmed the cessation of the benchmark LIBOR. LIBOR, therefore, will no longer be published after 31 December 2021 in most of its currencies and maturities.[35]

The FCA and the Bank of England noted already in 2017 that LIBOR suffered from significant deficiencies. The lack of transactions meant that the benchmark was too reliant on discretionary assessments. According to the FCA and the Bank of England, the high dependence of the market on LIBOR constituted a risk to financial stability. The banks that report to LIBOR agreed to continue to report data for LIBOR through 2021, thus allowing for an orderly transition away from the benchmark.

Globally, legislators, authorities and private actors took a number of measures to strengthen the integrity of benchmarks and prevent them from being manipulated. One such initiative is the EU's regulation on benchmarks (the Benchmark Regulation), which in part establishes requirements for those administering and reporting to benchmarks that are used within the EU. In many countries, central banks and other market participants have begun to calculate benchmarks that are based entirely on transactions. Many administrators also adjusted their methods to

[35] All maturities in the currencies GBP, EUR, CHF, JPY and some maturities in USD. The remaining maturities in USD will cease publication on 20 June 2023. For more information, see https://www.fca.org.uk/publication/documents/future-cessation-loss-representativeness-libor-benchmarks.pdf.

calculate traditional benchmarks, interbank offers rates (IBOR), in order to base them more on transactions in underlying markets.

The cessation date for the publication of LIBOR, 31 December 2021, is approaching. This affects, among others, all participants using LIBOR as a benchmark in financial contracts, and it is therefore important for users to reduce their exposures. The FCA and the Bank of England are working together with market participants in the RFR Working Group to facilitate a transition away from LIBOR to transaction-based benchmarks. Several of the new transaction-based benchmarks have existed for a while and are becoming increasingly established. At the beginning of 2021, Swedish participants still had exposures to LIBOR. Since there is not much time left, FI would thus like to encourage all market participants under our supervision to prepare for the cessation of LIBOR.

Benchmarks in Sweden

In September 2021, the Riksbank began to publish a new transaction-based benchmark on the shortest maturity in SEK: SWESTR. On 1 October, the Riksbank also published for the first time average rates and an index based on SWESTR.

The Benchmark Regulation lays forth that FI is the competent authority in Sweden. According to the regulatory framework, the administrator of the Swedish critical benchmark STIBOR, the Swedish Financial Benchmark Facility (SFBF), must apply for authorisation from FI no later than 31 December 2021. SFBF, like administrators in several other countries, has worked to adapt STIBOR to the requirements laid down in the regulation. STIBOR must be reformed and authorised, thereby falling under FI's supervision, in order to be able to continue to be used as a benchmark.

If STIBOR remains, it will exist in parallel to SWESTR. It is thus now possible to instead use a fully transaction-based benchmark even for financial contracts in SEK. This means that users can freely switch to SWESTR. An increase in the use of transaction-based benchmarks that have a high level of confidence and do not contain discretion reduces the risk of manipulation and in turn contributes to enhancing the stability of the financial system.

Stability in the insurance sector

Life insurance undertakings and occupational pension undertakings continue to have good solvency, although the low market rates continue to present a challenge for undertakings with long-term financial guarantees. Investments in risky assets are continuing to rise, but the undertakings have buffers to manage the increase in risk-taking.

	Level	Change
Low interest rates and high guarantees		→
Investment risk		→
Financial position		→
Concentration of assets		→

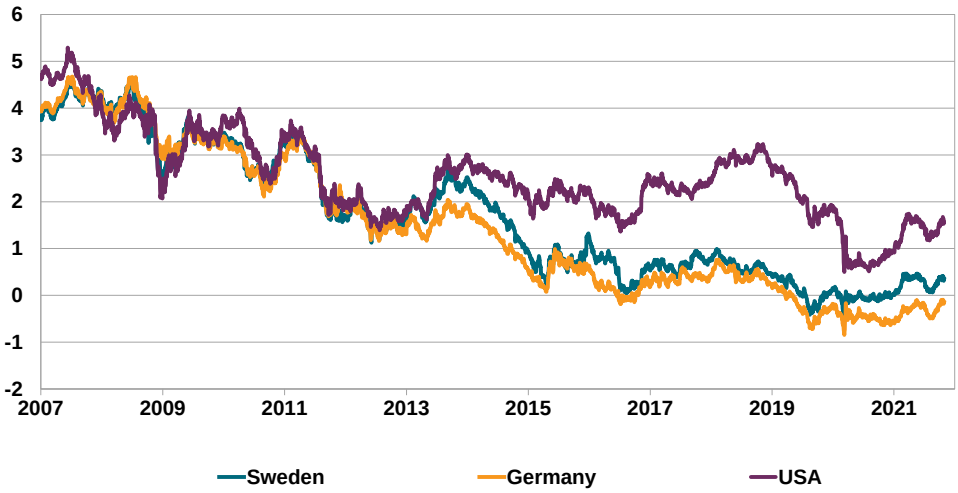
The colors indicate the current level of vulnerability. Green represents low vulnerability. Yellow, orange and red indicate differing degrees of elevated vulnerability. The arrows show the trend for the vulnerability – increasing, decreasing, or unchanged. The level and trend are based on a combination of quantitative measurements and expert assessments.

Low interest rates continue to present a challenge

Many life insurance and occupational pension undertakings have long-term commitments with financial guarantees and are therefore sensitive to changes in, primarily, market rates with longer maturities. Market rates have been low for many years, which has had a negative impact on the possibility of returns on interest-bearing securities (Diagram 15). These securities have historically constituted a large portion of the investment assets. Undertakings have therefore needed to lower their financial guarantees in recent years. In addition to the guaranteed amount, bonuses are paid based on the yield in the investment portfolios. In order to obtain a return that covers both the guaranteed and the expected return, the undertakings need to invest in riskier assets, such as shares, when interest rates are low.

15. Government bond yields with long maturities

Per cent



Source: Refinitiv Datastream.
Note: 10-year government bond yields.

Continued high risk in investments

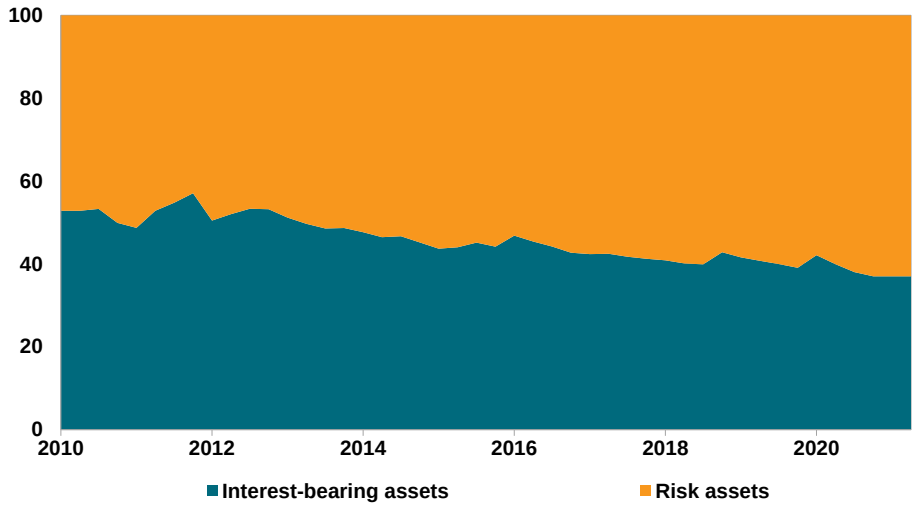
Swedish life insurance undertakings and occupational pension undertakings have a large share of their assets invested in riskier assets, primarily in shares (Diagram 16). The undertakings therefore have benefited from the strong growth in the stock market in recent years. The sharp increase in asset prices, and thereby high valuations on the stock markets (see “Stability on the financial markets”), however results in expected low future returns on share-based investments. The sharp increase in asset prices also means that the undertakings may be sensitive to turbulence. If a shock occurs, this could lead to a large fall in prices, which could impair the undertakings’ solvency. The undertakings may then need to reduce the risks in their investment portfolios by, for example, selling shares and buying government bonds to maintain satisfactory solvency. In a stressed market, this can place additional pressure on share prices, which in turn could impact financial stability. Despite the elevated investment risks, however, the undertakings currently have buffers that will enable them to manage even major shocks to the financial markets. A downturn in the financial markets would therefore need to be more extensive and persistent for the undertakings to need to make large changes to their portfolios.

To not only increase diversification but also create higher returns, the undertakings are also investing in more illiquid assets such as real estate and so-called

alternative assets.[36] These asset classes are not traded on regulated markets, which can limit the opportunities to sell them, particularly during economic recessions. The life insurance undertakings and occupational pension undertakings that invest in these types of assets generally have a strong financial position and good liquidity. They therefore face good conditions for keeping these assets, particularly during periods of falling prices and low valuations.

16. Percentage of risky assets continues to increase

Per cent



Source: Statistics Sweden.
Note: “Interest-bearing assets” consists of listed interest-bearing assets, subordinated loans, corporate bonds, and cash and cash equivalents. “Risky assets” consist of shares, real estate and alternative investments.

Financial position still satisfactory

The solvency of life insurance undertakings and occupational pension undertakings continued to improve after the downturn at the start of the pandemic. Their traffic-light ratios have been stable, showing only a slight downturn at the reporting occasion immediately following the most turbulent period (Diagram 17)[37]. Despite

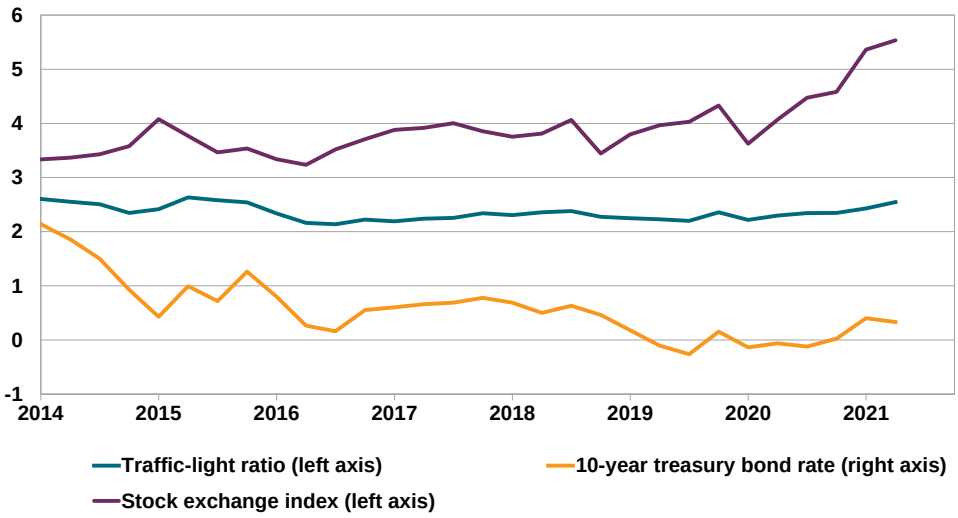
[36] Holdings in real estate refer to both commercial real estate and residential properties. Alternative investments include primarily investments in private equity and other risk capital funds, hedge funds, structured products, loan funds, direct loans, infrastructure and other unlisted shares.
[37] The traffic-light is a supervisory tool that places the capital buffer held by an insurance undertaking (assets minus liabilities) in relation to an estimated capital requirement based on the insurance undertaking’s exposures to various risks. If an undertaking has a capital buffer of SEK 200 million and a capital requirement of SEK 100 million, its traffic-light ratio is 2. The traffic-light applies to a large share of the life insurance and occupational pension activities.

dips in both the solvency ratio and the traffic-light ratio in the spring of 2020, no undertakings reported that they were below the approved level.

There is a risk, though, that the solvency regulations that apply to insurance undertakings and occupational pension undertakings underestimate long-term commitments during prolonged periods of low interest rates (see "In-depth analysis – Ultimate Forward Rate impacts solvency"). This means that the value of the liability is lower and, correspondingly, the solvency higher than if market rates were used in the calculation. Even if, under these conditions, the regulations lead to an underestimation of the future pension liability, the undertakings have good buffers for managing this, which is evident in the follow-up of the solvency and traffic-light ratios.

17. Traffic-light ratios still stable

Ratio (left axis) and per cent (right axis)



Sources: FI, Nasdaq OMX and the Riksbank.
Note: Traffic-light ratio for life insurance firms that still use the Solvency I regulations in relation to the growth of a yield index for Swedish shares and the ten-year government bond rate. Since the traffic-light ratios are reported quarterly, these do not show the effect of the large downturn in February 2020.

Significant exposures to the banking sector

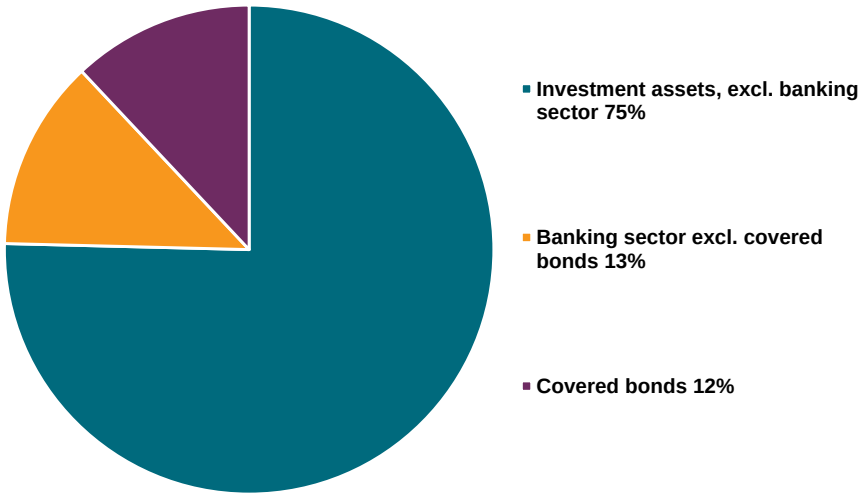
Swedish life insurance undertakings and occupational pension undertakings hold a larger share of investment assets in securities linked to the banking sector than many corresponding undertakings in Europe do.[38] Approximately half of these assets are covered bonds while the rest are other exposures to primarily Swedish banks, for example shares and commercial paper (Diagram 18). This means there is a concentration not only to the sector itself but also in terms of geography.

[38] Financial Stability Report – July 2021 published by the European Insurance and Occupational Pensions Authority (EIOPA).

However, this vulnerability is offset by the fact that Swedish covered bonds have historically proven to be low risk and Swedish banks generally are much stronger than banks in the rest of Europe. But if problems arise in one bank, this could spread to several banks and thus lead to a general fall in prices on securities issued by Swedish banks. This would in turn have a negative impact on the investment portfolios of life insurance undertakings and occupational pension undertakings. If they needed to sell these securities in such a scenario, there is a risk that this would amplify the drop in prices. However, based on the buffers life insurance undertakings and occupational pension undertakings have today, this would first require a severe and drawn out recession.

18. Exposure to banking sector

Per cent



Source: FI.

Note: Exposure to the banking sector. Covered bonds are reported separately since they are subject to their own legislation. The compilation refers to Solvency II firms as per 30 June 2021.

In-depth Analysis – Ultimate Forward Rate impacts solvency

Life insurance undertakings and occupational pension undertakings have commitments that stretch far into the future. The calculation of the value of these commitments uses a model assumption that the interest rate will move towards equilibrium over time, the Ultimate Forward Rate (UFR). This equilibrium rate is starting to be phased in for longer maturities where interest rate swaps are not considered to be sufficiently liquid for calculation the value. The aim of the UFR is to limit how rapidly changes in the interest rate impact the undertakings' financial position when they value their insurance commitments. Without the UFR, interest rate changes would have a rapid and large impact on the valuations, which means that the undertakings' financial position could vary considerably. They may then need to

make quick adjustments to their investment portfolios, which could amplify market fluctuations. The UFR thus helps to reduce the risk of procyclical behaviour.

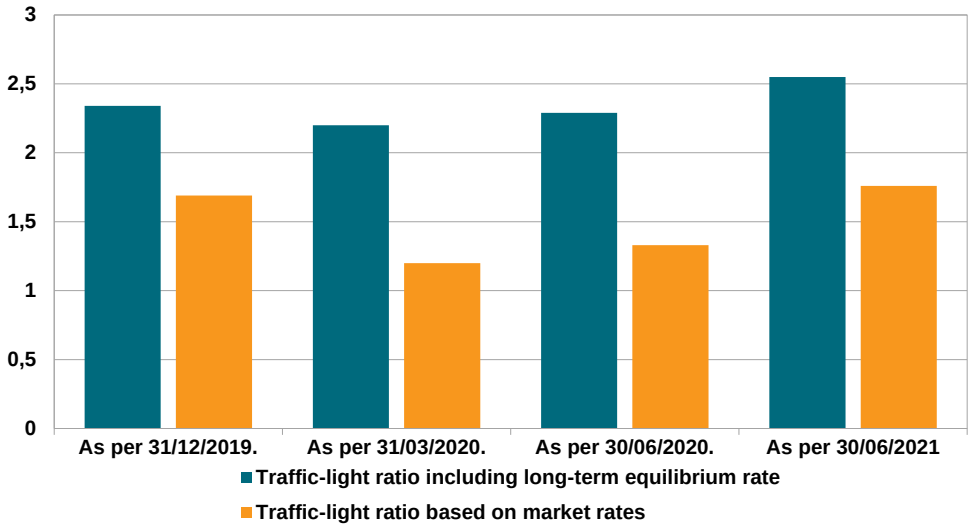
Because the UFR is higher than the current market rates, the value of the liability is lower, and the solvency correspondingly higher, than when using the market rates. There is therefore a risk that this model underestimates how much capital needs to be earmarked for insurance commitments when market rates are low for a longer period of time. The UFR is adjusted gradually downward on an annual basis and thus approaches the market rates in the long term. This means that the difference in the valuation will decrease over time, even if the adjustment is slow. A prolonged period of low interest rates could thus lead to solvency problems for the undertakings, and in a worst-case scenario they may find it difficult meet their future pension commitments. The effects therefore will have a gradual impact and first be realised in the far future. It is thus not comparable with the immediate effects that arise, for example, when share prices fall. In a prolonged period of low interest rates, the resilience of undertakings to falling asset prices is impaired at the same time as their need for returns on non-interest-bearing assets increases.

The solvency regulations also contain limitations on how much interest rates can be stressed in the capital requirement calculations. Where the interest rate is negative, maturities are not stressed at all, and where the interest rate is positive, they are not stressed below zero. Subsequently, interest rate risk, one of the most important risks for insurance undertakings and occupational pension undertakings with long-term commitments, is not captured adequately. This means that the undertakings' resilience is overestimated during periods of low interest rates.

The risks associated with this model assumption will persist if interest rates remain low. FI therefore also estimates the firms' financial positions based on a curve built solely from market rates, i.e., without the assumption of the long-term equilibrium rate. Current estimates show that the model assumption of a long-term equilibrium rate has a significant impact on insurance firms' financial position (Diagram 19). The diagram shows the outcome for the quarter immediately before, after and during the pandemic and the most recent estimate.

19. Long-term equilibrium rate impacts solvency

Ratio



Source: FI.

Note: Ratios based on market rates (excluding the assumption of a long-term equilibrium rate) are estimates by FI.

Stability in the banking sector

Banks have emerged from the crisis in relatively good shape despite higher credit losses in lending to corporates. The recovery of the economy reduces the uncertainty and the risk of large problems in the banking sector in the near future. However, there are also large risks in the banks' lending portfolios, where, for example, lending to commercial real estate (CRE) firms has become riskier. The banks therefore need to continue to hold significant capital and liquidity buffers that can be drawn upon if the situation worsens.

	Level	Change
Concentration and interconnectivity		→
Solvency and profitability		↘
Asset quality and credit risk		→
Financing and liquidity		→

The colors indicate the current level of vulnerability. Green represents low vulnerability. Yellow, orange and red indicate differing degrees of elevated vulnerability. The arrows show the trend for the vulnerability – increasing, decreasing, or unchanged. The level and trend are based on a combination of quantitative measurements and expert assessments.

Banking sector concentrated and interconnected

The Swedish banking sector is largely concentrated to five major banks: Svenska Handelsbanken (SHB), SEB and Swedbank, as well as Nordea's and Danske Bank's Swedish branches and mortgage companies.[39] The major banks are closely interconnected, both to one another and to other parts of the finance sector. This creates structurally elevated vulnerabilities in the financial system – if any of the major banks has problems, these problems can quickly spread to other financial firms. In recent years, competition on the banking market has increased and the major banks have lost market shares on some submarkets. The concentration in the banking sector has therefore decreased somewhat, but despite this the major banks continue to play a central role in Sweden.

High profitability contributes to good resilience

The major banks went into the pandemic with significant capital buffers. The banks' management buffers – the capital the banks hold in addition to the capital

[39] For the five major banks, the figures refer to the consolidated situation unless otherwise specified. Together they represent around 75 per cent of deposits and lending to Swedish households and corporates and just under 70 per cent of domestic payments. Danske Bank's and Nordea's Swedish branches are referred to in the following as "systemically important branches".

requirements – increased in 2020 and remains at an elevated level. This is in part because FI and other Nordic supervisory authorities lowered the countercyclical buffer rate at the beginning of the crisis to free up capital in the banks. In addition, the banks did not issue dividends during the crisis in accordance with the recommendations from FI and other European authorities.

Since the Swedish economy has clearly entered a recovery phase and the uncertainty around economic development has decreased, FI withdrew on 30 September its recommendation to limit dividends. Following current practice, FI's position was coordinated with the corresponding assessment by the European Systemic Risk Board (ESRB). The major banks have therefore announced that they will issue dividends to shareholders during the fourth quarter. Some banks also decided to buy back shares.

In March 2020, FI lowered the countercyclical buffer rate from 2.5 per cent to zero. The objective was to free up capital so the banks could maintain their supply of credit even if they experienced large losses. FI decided on 28 September of this year to once again raise the countercyclical buffer rate to 1 per cent, which will go into effect as of September 2022 (see "In-depth analysis – FI aims to leave the countercyclical buffer rate unchanged in the fourth quarter").

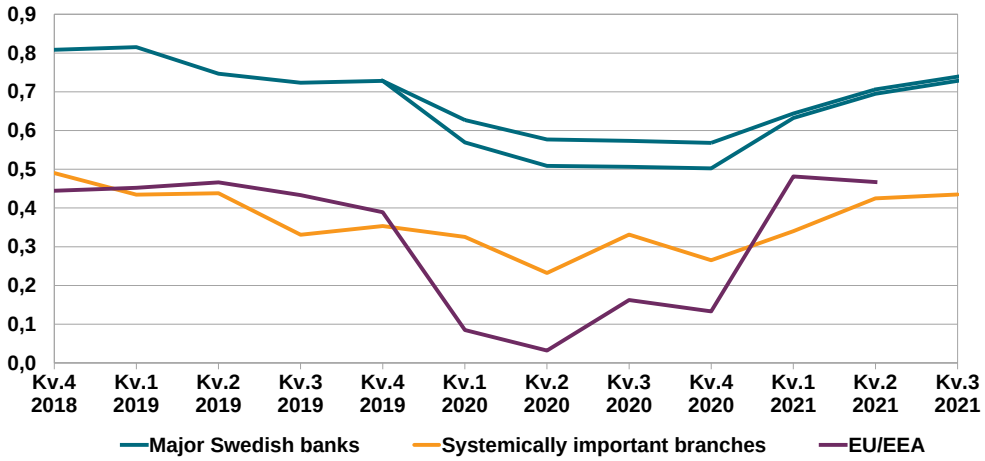
As of Q3 2021, the EU's so-called banking package applies in full in Sweden, which further increases the amount of capital the banks need to hold as a buffer (see "In-depth analysis – Capital requirements for Swedish banks").

The earnings of the major banks dipped at the beginning of the pandemic primarily due to an increase in credit loss provisions but also due to the strong growth in deposits.[40] Since then, the major banks' earnings have improved. The drop in profitability in the Nordic banks was relatively limited compared to the European banking sector as a whole. The five major banks continued to have high operating income; earnings and returns continued to improve in 2021 (Diagram 20). This means that it will be easier for them to absorb any credit losses.

[40] Strong deposit growth can generate surplus liquidity that banks normally deposit at the Riksbank. The Riksbank's deposit rate is negative, but the banks, with a few exceptions, have chosen not to drop their deposit rates to below zero.

20. Limited profitability drop in Nordic banks during crisis

Per cent



Sources: FI and the EBA's (European Banking Authority's) Risk Dashboard.
Note: Annualised return on total assets, four-quarter rolling mean. Dashed blue line excludes money laundering-related sanction fees in Swedbank and SEB in 2020.

Credit risks lower general, but increasing in CRE lending

The banks' credit loss provisions increased in 2020, albeit from low levels (Diagram 21). The provisions are primarily linked to corporate lending, including the transport sector, industry, and parts of the service sector. A relatively large portion also comes from the oil sector, which began to experience problems already before the pandemic. The realised credit losses were limited, and the uncertainty within the economy has decreased significantly. During the first three quarters, the credit loss provisions fell sharply and are back at pre-pandemic levels.

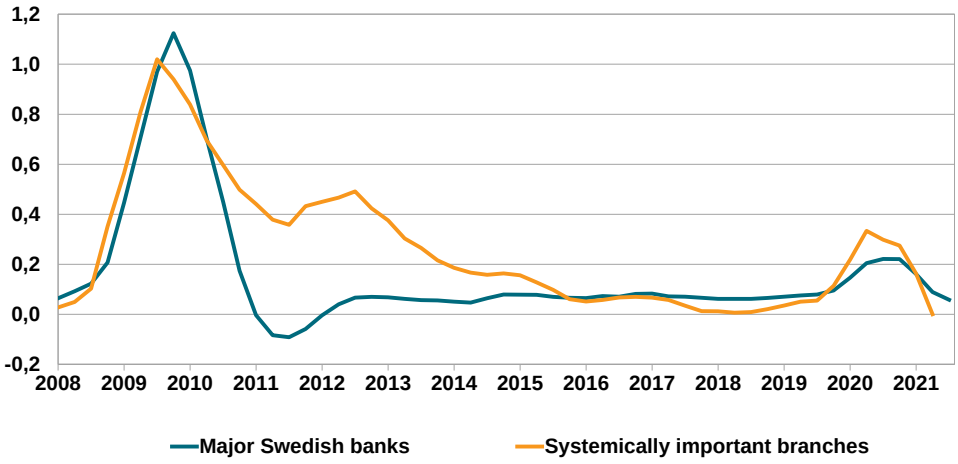
At the same time, there is a longer term vulnerability due to firms having become more indebted (see "Non-financial corporations"). It is also possible that the large fiscal policy support packages have delayed some of the impact of the pandemic and hidden certain problems in the commercial sector. An increase in bankruptcies can impact the banks' results, particularly if credit loss provisions recorded during the pandemic are reversed too quickly.

The major banks also hold large and growing exposures to the CRE sector, which represents between 10 and 25 per cent of each bank's lending to the general public. The CRE firms have weathered the crisis relatively well, but the risks are higher than they were before the pandemic. Therefore, the credit risks in the banks' lending to these firms have also increased since the start of the pandemic (see "Non-financial corporations"). FI previously made the assessment that there are elevated risks associated with the banks' CRE lending and therefore decided to introduce an additional capital requirement for these exposures, which went into

effect at the end of 2020. FI also decided to raise the countercyclical capital buffer and will have implmented a higher capital requirement after the banking package has been fully phased in. Thus, while vulnerabilities from CRE lending are increasing, the banks are simultaneously building higher resilience to those specific vulnerabilities.

21. Credit loss provisions dropped significantly

Per cent



Sources: FI and the banks' reports.
Note: Credit loss provisions at an annual rate as a share of total lending to the public. The negative credit loss provisions in 2011 are due to recovered provisions from previous years.

Favourable funding conditions

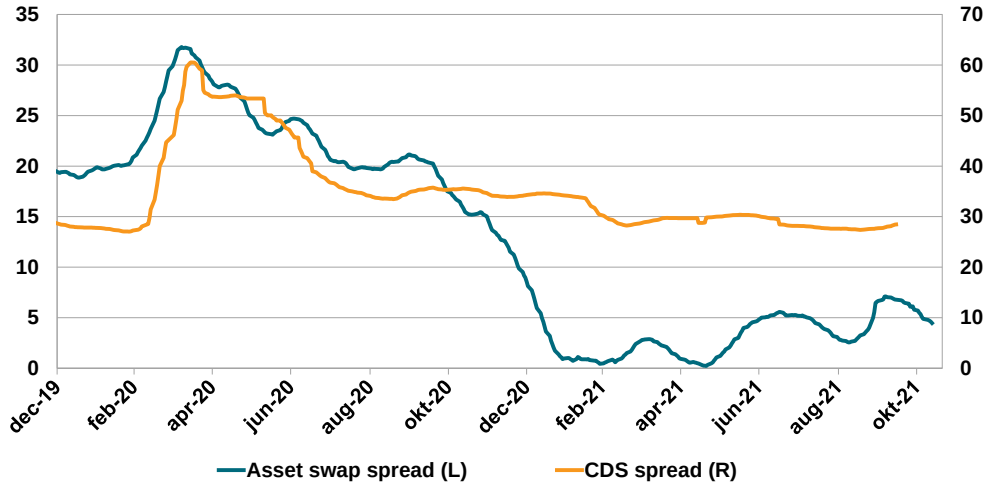
Banks have good access to financing via the securities markets. The deposit volumes of both households and corporates also increased during the pandemic, in both absolute figures and as a share of lending. Since the start of 2020, the banks' liquidity buffers have also strengthened. The banks therefore have good margins that can be used if the situation were to deteriorate.

The support measures that the central banks began to take in 2020 (see "Stability assessment") applied downward pressure to the banks' funding costs. Costs for wholesale funding have fallen significantly since the start of the crisis, and the risk premiums for covered bonds are significantly lower than before the crisis. The risk premiums for the banks' unsecured bonds have not fallen to the same extent (Diagram 22). This difference is largely due to the Riksbank's large purchases of covered bonds in particular. In order to avoid additional upward pressure on asset prices, these support measures should be wound down (see "Stability in the financial markets") so risk premiums normalise and the banks' borrowing costs better reflect market terms.

During the pandemic, the banks' deposits increased. This is due to both the Riksbank increasing its asset purchases and the increase in savings among households and corporates. Higher deposits have decreased, at least temporarily, the banks' need for wholesale funding. The increase continued in 2021, but as households and firms return to more normal consumption and investment patterns, the increase will most likely slow or level off. It is likely that the Riksbank must once again reduce its balance sheet in order for deposits to fall to pre-crisis levels.

22. Pressure on risk premiums lowered banks' funding costs

Basis points



Sources: Refinitiv Eikon and S&P MI.
Note: Credit spread (asset swap spread) for Swedish covered bonds with estimated fixed duration, 5 years effective maturity. Refers to one-month rolling average for the three major Swedish banks and Nordea. Credit spread (CDS spread) for senior unsecured bonds. Refers to one-month rolling average for the three major Swedish banks, Danske Bank and Nordea.

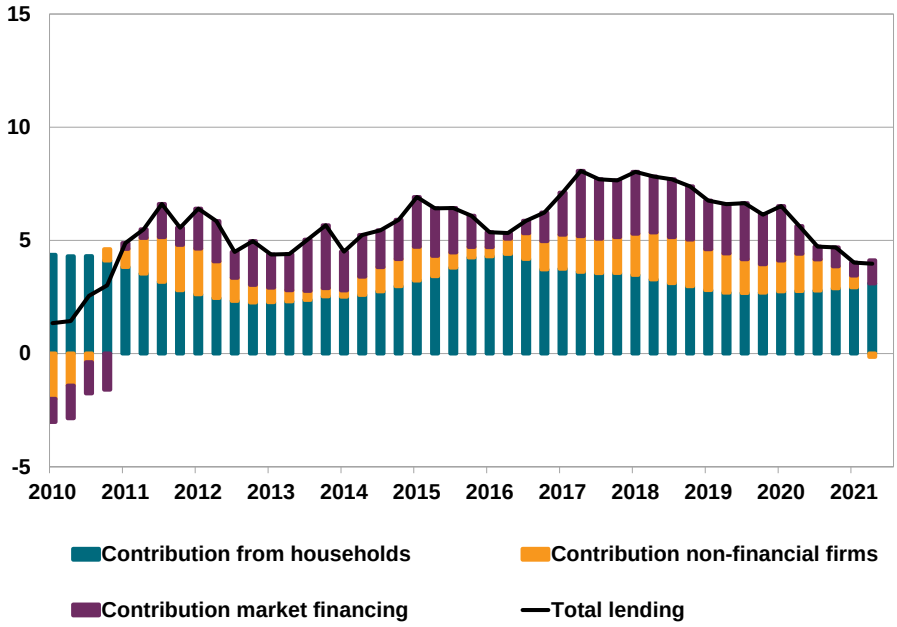
In-depth Analysis – FI aims to leave the countercyclical buffer rate unchanged in the fourth quarter

On 28 September of this year, Finansinspektionen decided to transition to a new decision process for the countercyclical capital buffer.[41] Under the decision, the authority repealed its regulations on the countercyclical buffer rate and replaced them with an official decision that will be published on FI's website. According to the new decision process, decisions related to a change in the buffer rate will no longer be submitted for consultation. FI's intention for the countercyclical buffer rate will instead normally be presented in the stability report within the context of our assessment of the economy and the financial and credit markets.

[41] See FI avser höja det kontracykliska buffertvärdet till 1 procent, 9 September 2021 (FI Ref. 21-20492). An English translation is available at www.fi.se.

23. Lending to corporates and households and nominal GDP

Annual percentage change



Source: Statistics Sweden.

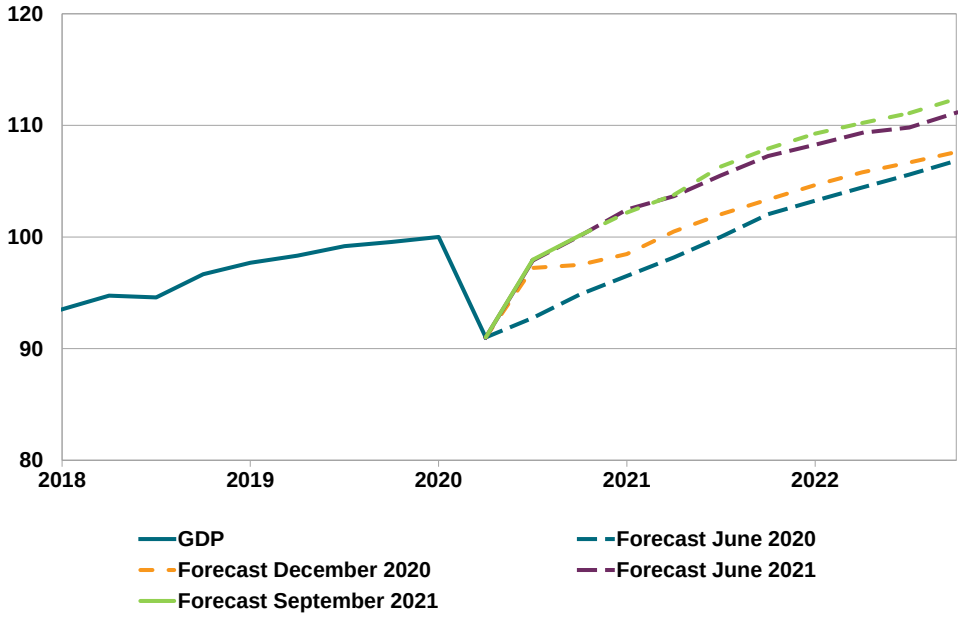
The countercyclical capital buffer was lowered during the pandemic to ensure that the banks would be able to maintain the supply of credit even if they experienced large credit losses. These losses have not been realised, and the sharp upswing in asset and housing prices combined with rising debt among households and CRE firms indicates that the cyclical risks have increased (Diagram 23). In Q2 2021, total household debt increased by an annual rate of 6.1 per cent. This is a significantly faster rate than the growth in household income in recent quarters (Diagram 3 in Households).

Since March 2021, FI applies a positive neutral level of 2 per cent to the countercyclical buffer rate. A positive neutral level means that increases are begun at an early stage of the economic cycle before there are clear signs of rising systemic risks.[42] On 28 September, FI decided to initially raise the countercyclical buffer rate to 1 per cent. FI passed this decision based on its assessment that the economic recovery and the banks' capital and profitability were sufficiently strong to begin to raise the buffer (Diagram 24).

[42] For a more detailed description of the tool's purpose and how FI applies it, see "Tillämpning av den kontracykliska kapitalbufferten, 22 March 2021 (FI Ref. 21-7247). An English translation is available at www.fi.se.

24. GDP and NIER's economic forecasts

Index: Q2 2020 = 100

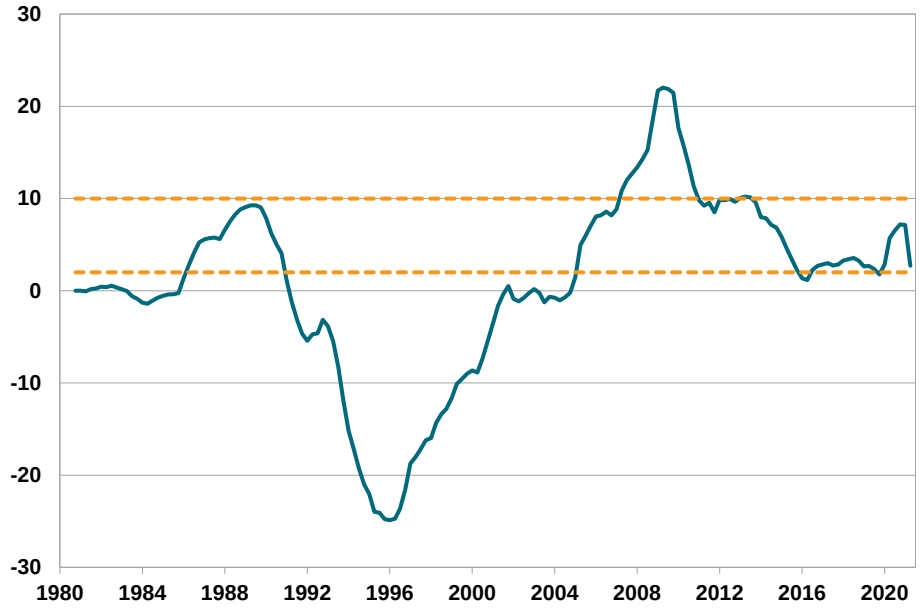


Source: NIER.

As the economic recovery continues, demand for loans from non-financial corporations is expected to increase. It is important that the banks are able to meet this demand. FI therefore monitors the developments on the credit market in its assessment of the countercyclical buffer rate. Despite the strength of the economic recovery, the debt of non-financial corporations increased more slowly in H1 2021 than in the same period in 2020 (Diagram 6 under Non-financial corporations). In Q2, the debt of non-financial corporations grew at an annual rate of 1.8 per cent. This was 4.1 percentage points lower than Q2 2020. Overall, total debt increased by 4 per cent at an annual rate in Q2 2021. This was 1.7 percentage points lower than in Q2 2020 and is explained by the low growth in lending to non-financial corporations. Combined with GDP growth having gained momentum, this means that the credit-to-GDP gap decreased in the second quarter (Diagram 25) and the countercyclical buffer guide fell to 0.22 per cent (Diagram 26).

25. Credit gap according to the standardised approach

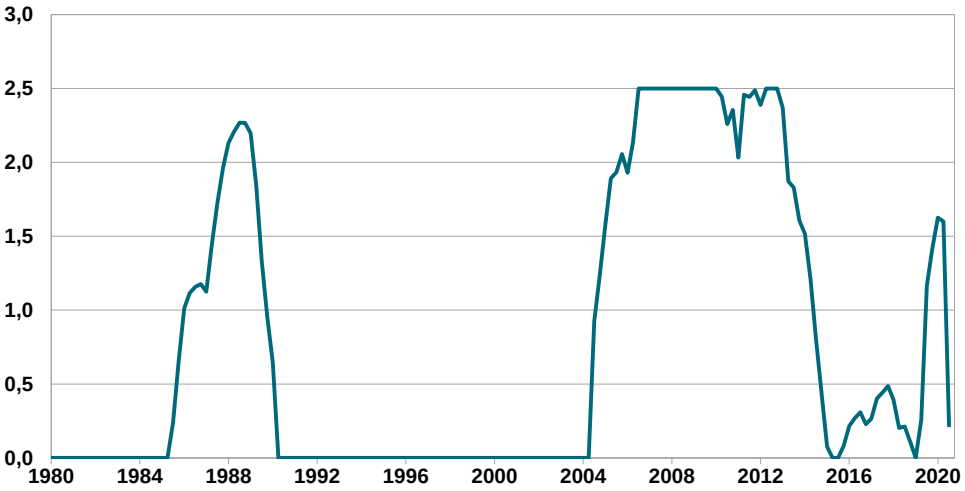
Deviation from trend, ppts



Sources: FI and Statistics Sweden.
Note: The dashed lines show the thresholds (2 and 10 per cent, respectively) that according to the standardised approach are to be used to transform the credit-to-GDP gap into a buffer guide.

26. Buffer guide according to the standardised approach

Per cent



Sources: FI and Statistics Sweden.

FI makes the assessment that the lower growth in lending to corporates is primarily driven by lower demand for credit rather than a tightening of supply. This assessment is supported in part by the lower risk premiums on the corporate bond

market (Diagram 10 in Stability of the financial markets), but also the Economic Tendency Survey from the National Institute of Economic Research. Despite this, there is cause for caution when raising the countercyclical buffer rate to its neutral level. The strength of the economic recovery – combined with households' rapidly rising debt and increasing risks in the CRE sector – indicates that additional increases will follow. However, there is still some uncertainty related to the economic development, potential credit losses in sectors that were hit hard during the pandemic, and the banks' capacity to meet demand for credit to non-financial corporations. FI therefore intends to leave the countercyclical buffer rate unchanged in Q4 2021. If the economic recovery continues, credit losses are low, and the banks have enough capacity to meet the demand from non-financial corporations for credit, FI's intention is to raise the countercyclical buffer rate to 2 per cent during 2022.

In-depth Analysis – Capital requirements for Swedish banks

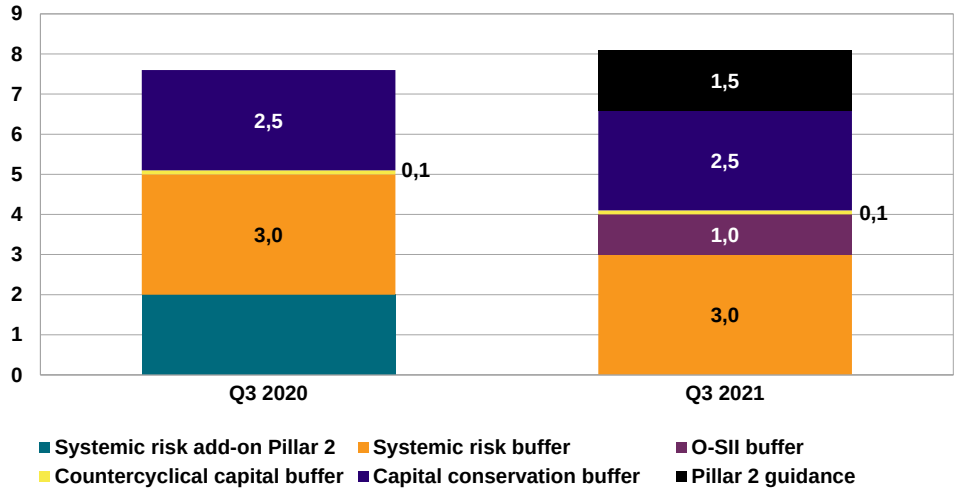
Starting in Q3 2021, FI will introduce so-called Pillar 2 guidance for the banks. This is the last step in Sweden's implementation of the EU's banking package. Under the Pillar 2 guidance, FI will inform banks how much additional own funds they should hold in addition to the normal capital requirements. This additional capital is intended to cover risks, or aspects of risks, and stressed situations that are not already covered by the capital requirements. For the major banks, the Pillar 2 guidance is 1.5 per cent of risk-weighted assets.

Under the other parts of the banking package, which have already been implemented, the Pillar 2 systemic risk add-on (2 per cent of risk-weighted assets) was removed, and the capital buffer for other systemically important institutions (the O-SII buffer, 1 per cent) is now added to the systemic risk buffer (3 per cent) instead of being overlapped by it. The changes are summarised in Diagram 27. Overall, the changes mean that the major banks' capital buffers, including the Pillar 2 guidance, will be 0.5 percentage points larger.

The banking package also contains a leverage ratio requirement. This requirement is not risk-based; it is expressed as a percentage of the leverage ratio exposure amount rather than a share of risk-weighted assets. The leverage ratio requirement is 3 per cent and applies in parallel to the risk-based capital requirements. It was implemented in Q2 2021 in Sweden. FI can also issue a Pillar 2 guidance for the leverage ratio requirement. For the major Swedish banks, FI issued such a guidance of 0.5 percentage points. The leverage ratio requirement and its accompanying guidance does not mean that these banks must hold more capital than what is specified by the risk-based requirements and the Pillar 2 guidance, but it can influence how much of the buffers can be used in a crisis.

27. Banks' capital requirements change under the banking package

Per cent



Source: FI.

Note: Capital requirements as a share of risk-weighted assets. The diagram shows the capital requirements that apply over and above the minimum requirement and the regular capital add-on in Pillar 2. The figures illustrate the situation for an average major Swedish bank.

In-depth Analysis – Major Swedish banks show resilience in EU stress test

In 2021, the European Banking Authority (EBA) conducted a stress test of the banking system in the EU based on a crisis scenario developed by the European Systemic Risk Board (ESRB). Stress tests are one of several ways to test the banks' resilience. The EBA has developed extensive method descriptions to make the results for the banks included in the test as comparable as possible.

The scenario in the stress test is three years long and includes a severe economic downturn and a sharp fall in real estate prices following an aggravated pandemic. The scenario also assumes low or negative interest rates for a long period of time and that pandemic-related support measures are not extended.

For Sweden, the scenario means that GDP falls by at the most 4.7 per cent (compared to 3.6 per cent for the EU as a whole) and that unemployment rises to 14.3 per cent. As a result of the weakened conditions, share prices fall by 50 per cent and Swedish long-term market interest rates by 72 basis points during the first year of the scenario. The ESRB makes the assessment that Swedish housing prices are sharply overvalued. Therefore, housing prices fall by 28 per cent in the scenario. Commercial real estate prices fall by 40 per cent.

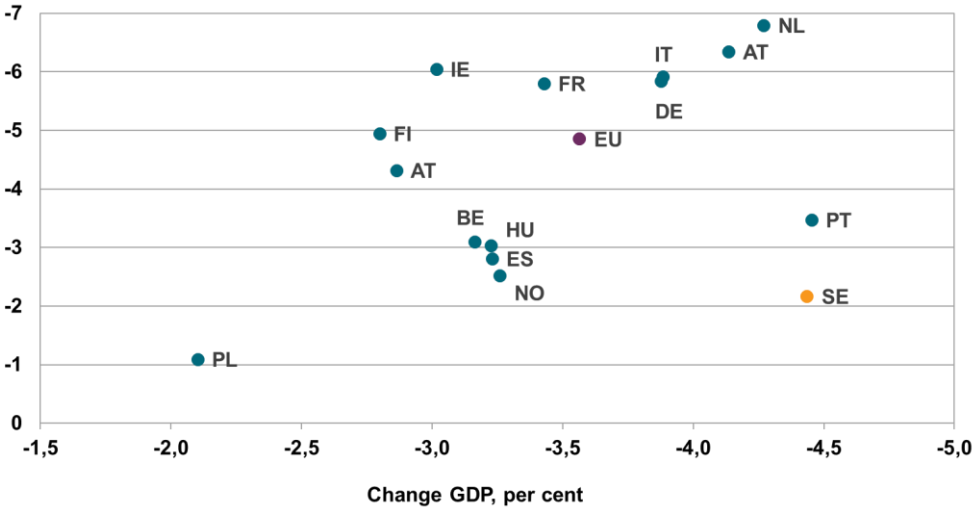
The largest 50 banks in the EEA participated in the stress test. The banks calculate their results themselves but under the supervision of the supervisory authorities.

For the Swedish banks, FI reviewed the assumptions, calculations and results to ensure that the final calculations met the requirements on comparability. The results were published on 30 July and show that the five Swedish banks that participated are resilient to the unfavourable scenario. The common equity Tier 1 capital ratio fell during the scenario by between 2.6 and 4.1 percentage points for the major banks and by around 1.3 percentage points for the other banks (SBAB Bank and Länsförsäkringar Bank). All Swedish banks in the stress test withstood the unfavourable scenario without breaching the combined buffer requirement.

For banks from the other EU countries in the stress test, the common equity Tier 1 capital ratio fell by around 5 percentage points on average despite a less sever macroeconomic scenario (Diagram 28).

28. Limited capital reduction despite severe scenario

Change in CET 1 ratio, per cent

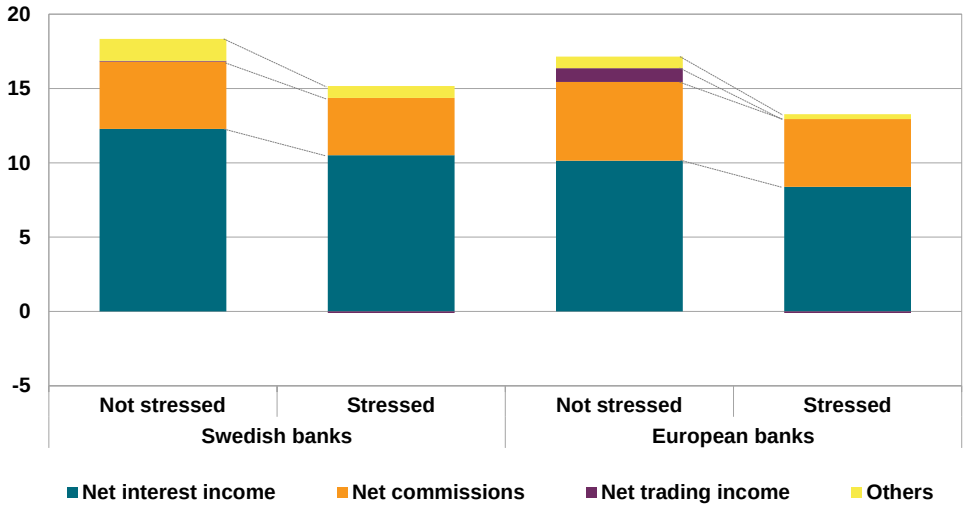


Source: EBA.
Note: The diagram shows the downturn in GDP in each country and the average decrease in capital in the country's banks. The downturn in GDP can be viewed as a simplified measure of how hard each country's banks are stressed.

There are several reasons for why the Swedish banks did so well in the test compared to other European banks. The primary reason is that Swedish banks start with higher earnings, which means that they can absorb more credit losses before they start to report losses that reduce their capital. Another reason is that Swedish banks have limited own positions on the securities markets and thus are less exposed to market risk. At the start, the European banks in the test on average make a significant profit from securities trading, which was completely eliminated in the scenario (Diagram 29).

29. Swedish banks have higher earnings even after stress

Operating income as a share of risk-weighted assets, per cent



Source: EBA.

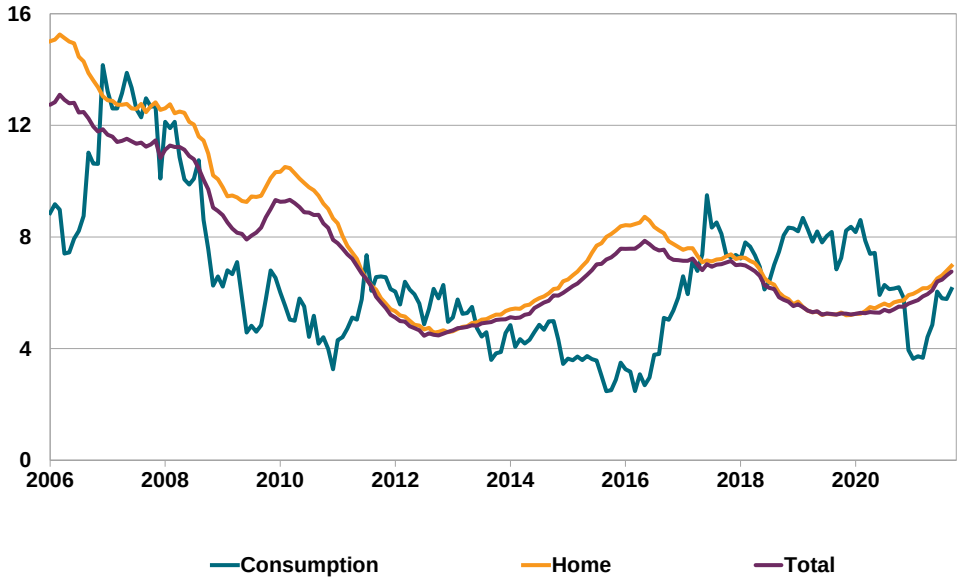
The results in the EBA's stress test support FI's assessment that the resilience in the Swedish banks is satisfactory and that they have sufficiently large capital buffers to be able to continue to supply credits to the real economy even in the event of a severe economic shock.

Appendix of diagrams

Households

A1. Household loans are growing faster

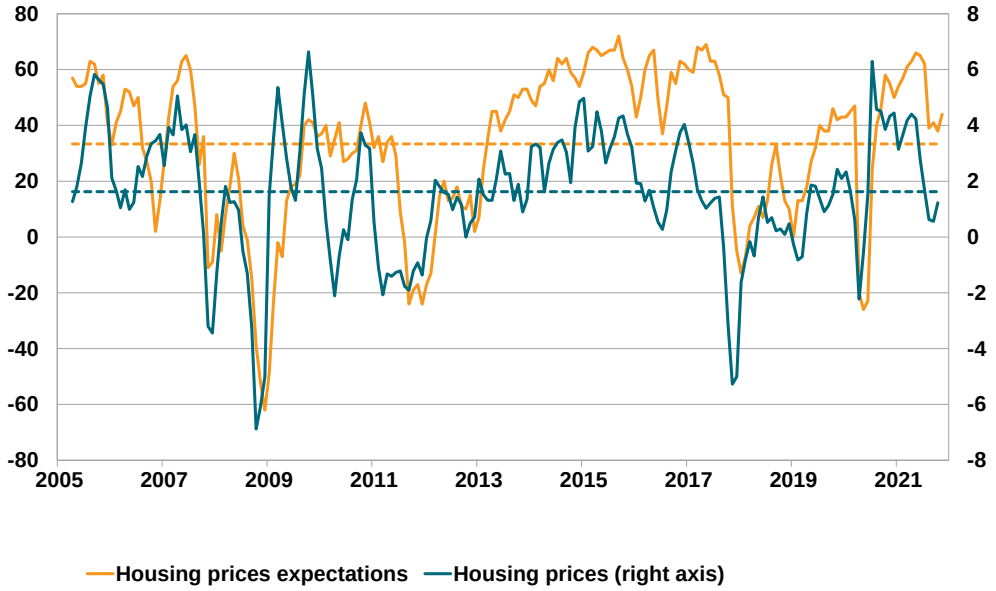
Per cent



Source: Statistics Sweden.
Note: Refers to annual growth for lending from Swedish MFI up through 2018. As of January 2018, it also includes lending from mortgage institutions and AIFs.

A2. High expectations on housing prices

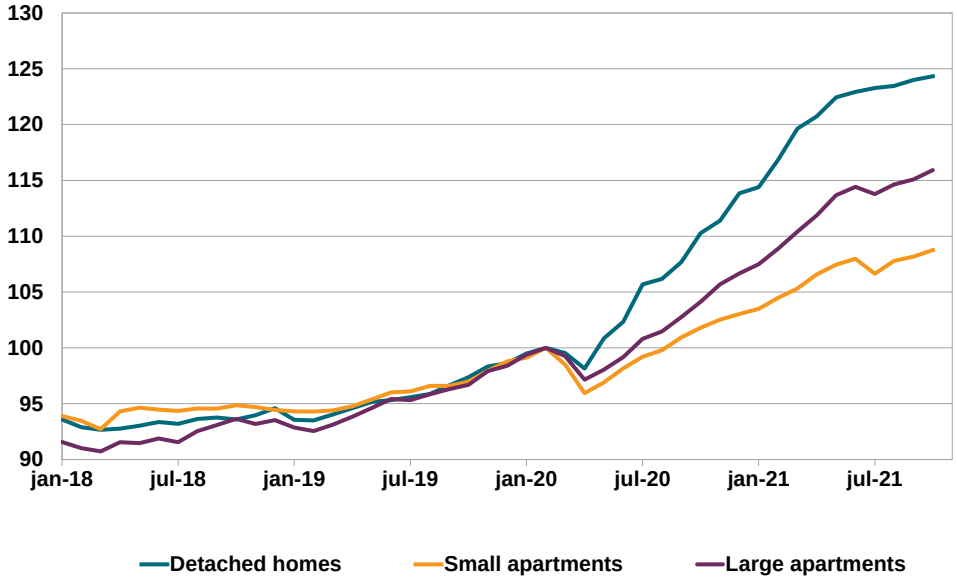
Net, per cent



Sources: SEB and Valueguard.
Note: Housing prices refer to quarterly growth for seasonally adjusted HOX Sverige. Net for Housing Prices Expectations is the difference between the share that believe prices will rise and the share that believe prices will drop. Dashed line refers to the average for each series since 2005.

A3. Faster growth for larger homes

Index= 100, February 2020

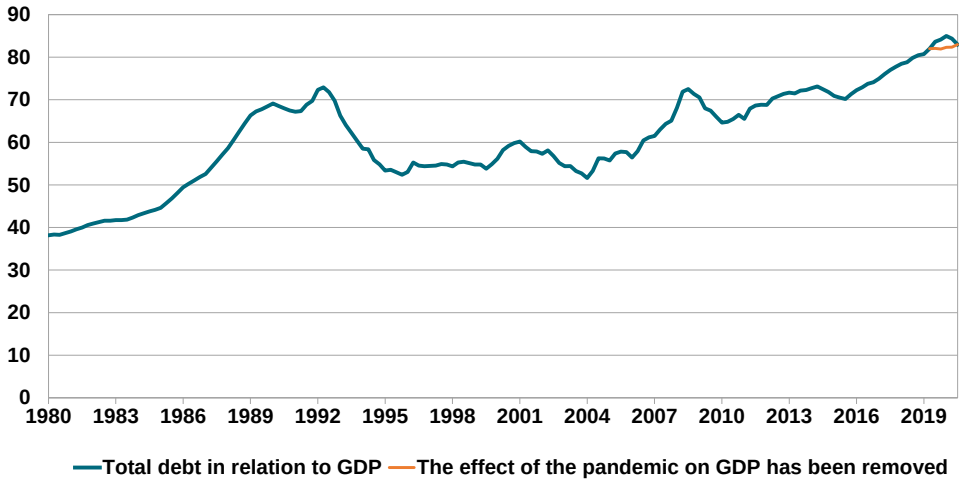


Source: Valueguard.
Note: Price series are seasonally adjusted.

Non-financial corporations

A4. Corporate debt per GDP is historically high

Per cent

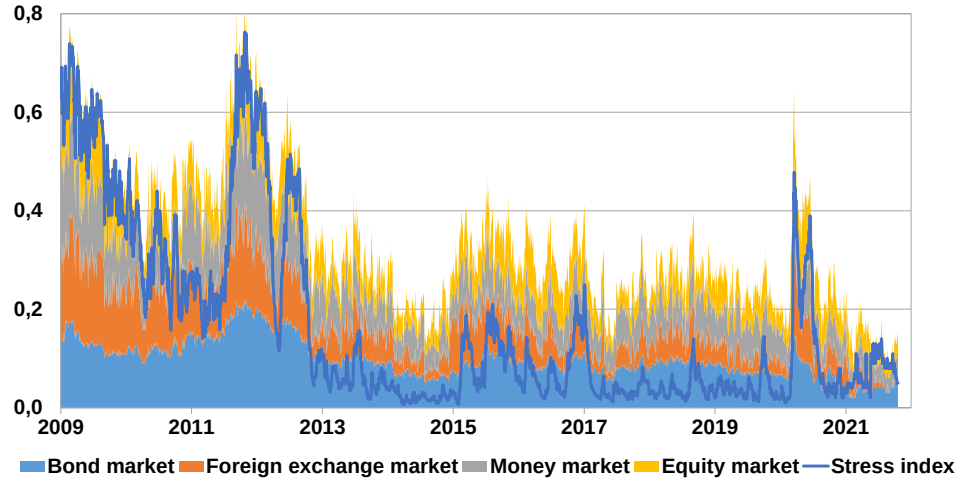


Source: Statistics Sweden.
Note: Refers to total debt (loans from MFI and outstanding bonds and commercial paper) in relation to GDP. The effect of the drop in GDP during the pandemic is removed by allowing GDP to develop linearly during the pandemic.

Stability in the financial markets

A5. Low stress levels in the financial markets

Ranking (0=low stress, 1=high stress)

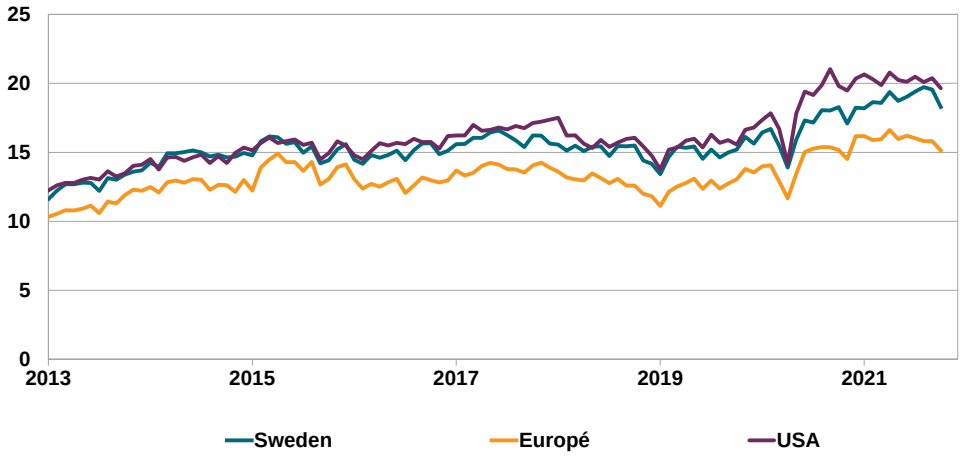


Sources: Bloomberg and Sveriges Riksbank.
Note: The Swedish stress index was created by Sveriges Riksbank using a method similar to that used by the ECB for the European stress index. See Johansson and Bonthron

(2013), “Further development of the index for financial stress for Sweden”, Economic Review 2013:1. Sveriges Riksbank. Last observation 2021-11-01.

A6. High forward-looking share valuations

18-month forward-looking P/E ratio

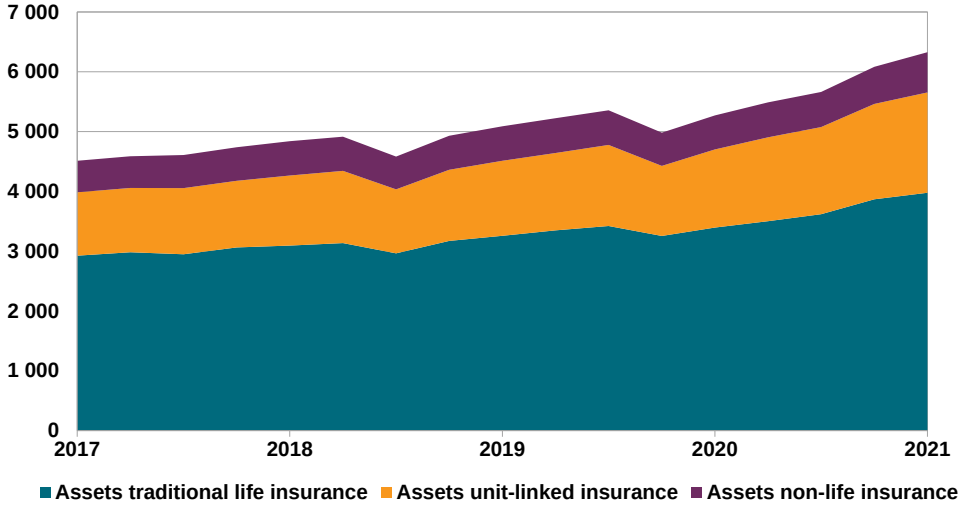


Source: Refinitiv Eikon.
Note: P/E stands for Price/Earnings. Forward-looking P/E ratio refers to earnings per share in relation to analysts’ earnings forecasts per share for the coming 18 months. Refers to companies on the Swedish, European and US markets. A historical average of forward-looking P/E ratios from 2012/11/09 to 2021/11/09. The historical average for Sweden is 15.4 per cent, for Europe 13.3 per cent, and for the USA 16.1 per cent.

Stability in the insurance sector

A7. Manage large amounts

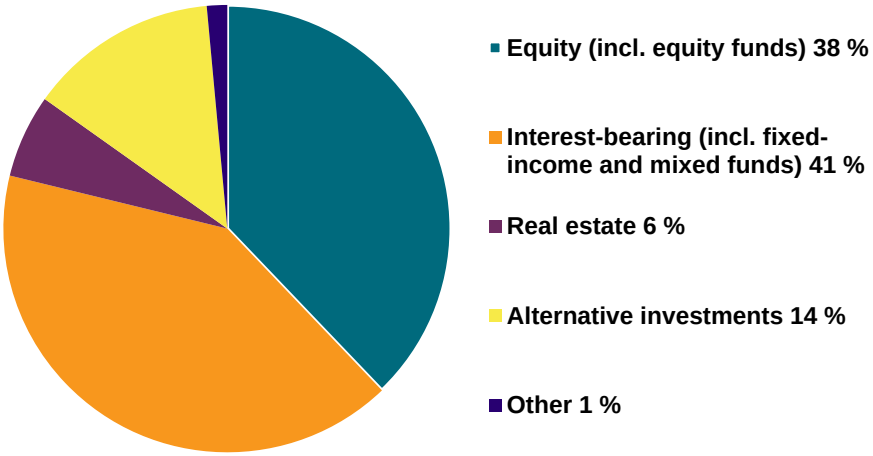
SEK billion



Source: Statistics Sweden.
Note: Insurance undertakings’ investment assets broken down into traditional life insurance, unit-linked insurance and non-life insurance.

A8. Distribution of investment assets

Per cent

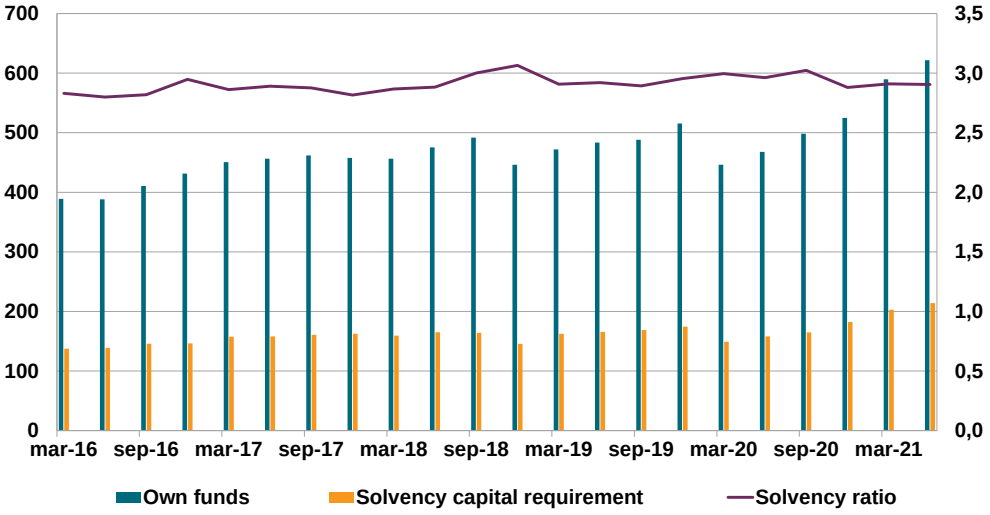


Source: FI.

Note: Distribution of investment assets in life insurance undertakings and institutions for occupational retirement provision, excluding unit-linked and deposit insurance, as per 30 June 2021.

A9. Solvency ratios still at good level

SEK billion (left axis) and ratio (right axis)



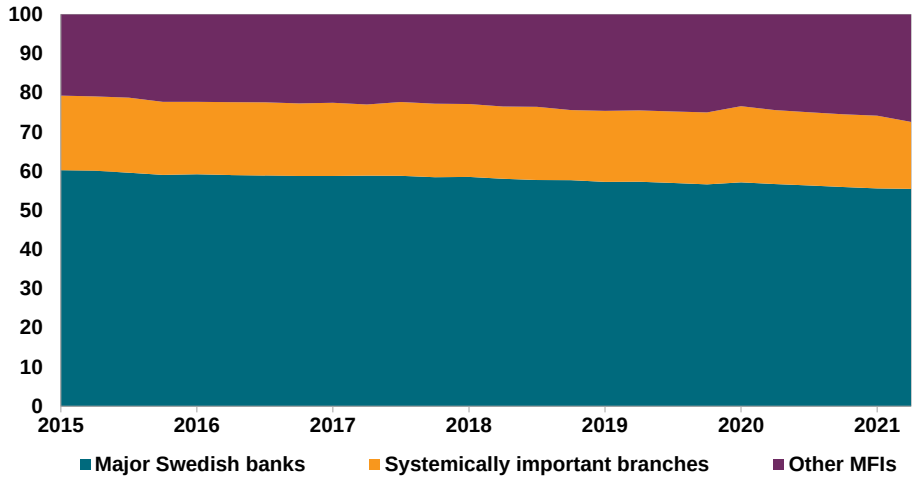
Source: FI.

Note: Own funds, solvency capital requirements, and solvency ratio (own funds divided by solvency capital requirements) according to the Solvency 2 reporting.

Stability in the banking sector

A10. Major banks lose market shares but are still dominant.

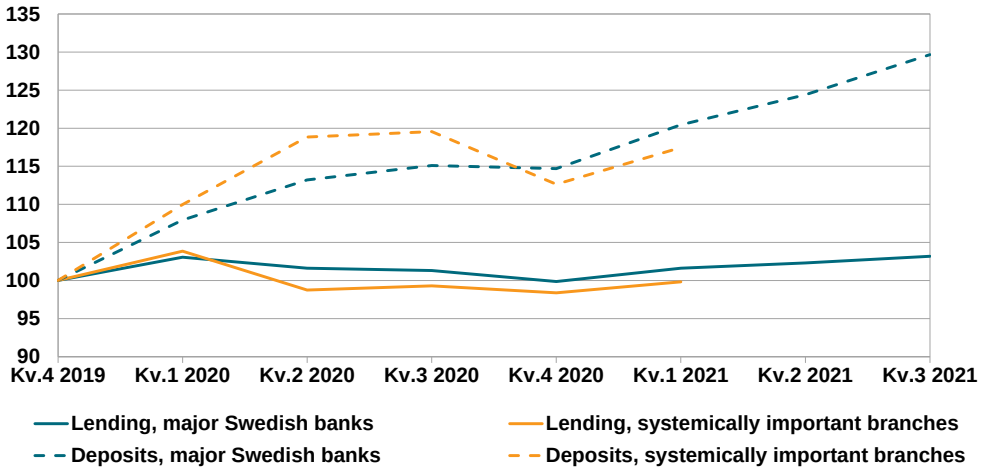
Per cent



Source: FI.
Note: Refers to lending to Swedish households and corporates. The market shares of the major banks have decreased from 80 to 75 per cent since 2014.

A11. Deposits at banks increased rapidly in relation to lending

Index 100 = Q4 2019



Sources: FI and the banks' reports.
Note: Refers to deposits and lending from/to households and corporates, average for the three major Swedish banks and banks with systemically important branches, respectively.