Financial Stability Report

2021:2

The Riksbank’s Financial Stability Report

The Riksbank’s Financial Stability Report is published twice a year. In the report, the Riksbank makes an overall assessment of the risks that can threaten the financial system and evaluates the system’s resilience to them. The work on the stability analysis is therefore directly linked to the Riksbank’s task of promoting a safe and efficient payment system. By publishing the results of its analysis, the Riksbank wishes to draw attention to, and warn of, risks and events that might pose a threat to the financial system, and to contribute to the debate on this subject.

The Executive Board of the Riksbank has discussed the report on two occasions – on 27 October and 9 November 2021. The report is available on the Riksbank’s website, www.riksbank.se. The report takes into account developments up to and including 2 November 2021.

The Riksbank and financial stability

- The Sveriges Riksbank Act states that the Riksbank shall promote a safe and efficient payment system.[1] Achieving this requires a stable financial system so that payments and the supply of capital function well. In practice, this task means that the Riksbank is responsible for promoting financial stability. The Riksbank defines financial stability as the financial system being able to maintain its three basic functions – the mediation of payments, the conversion of savings into funding and risk management – and also being resilient to shocks that threaten these functions.
- The Riksbank can provide liquidity support to individual institutions if problems arise that threaten financial stability. To be able to do this in the best possible way, the Riksbank needs to be well prepared for crises by having an efficient crisis organisation with good information channels and tools for analysis, as well as well-developed cooperation with other authorities.
- The Riksbank does not have the sole responsibility for promoting financial stability. It shares this responsibility with the Ministry of Finance, Finansinspektionen (FI, the Swedish financial supervisory authority), and the Swedish National Debt Office. The Ministry of Finance is responsible for the regulation of financial companies, FI for supervision and counteracting financial imbalances, and the Swedish National Debt Office for the government's management of banks in resolution, that is, in crisis. The interaction between the authorities is important both in the preventive work and in the event of a crisis materialising. The same also applies internationally, as financial companies operate across national borders.
- The financial system plays an important role in the economy. It is necessary to have a stable and smoothly running financial system for the economy to function and grow. A serious crisis in the financial system risks leading to considerable economic and social costs.
- The financial system is sensitive. This sensitivity is due to the vulnerability of central parts of the system, such as banks and markets. Banks are vulnerable mainly because they fund their operations at short maturities but lend at longer maturities. This imbalance makes them dependent on public and market confidence. If market participants lose confidence in their counterparties or in the financial instruments traded in the market, serious problems may rapidly arise. The various parts of the financial system are also closely interconnected as, for example, financial institutions often borrow from and trade with one another. This means that problems arising in one institution or market can rapidly spread throughout the system. Spillover effects may also arise if there is a general fall in confidence in similar activities.
- The combination of the sensitivity of the financial system and the large potential costs of a financial crisis means that the state has a particular interest in preventing threats to financial stability. This is because banks and other

[1] The Sveriges Riksbank Act (1988:1385).

market participants do not have an incentive themselves to give full consideration to the risks to financial stability they may cause. This is due to some of the costs of a financial crisis falling to other agents both within and outside the financial system. If a crisis occurs, the state therefore needs to intervene, but this should of course be done at the lowest possible cost.

- The Riksbank regularly analyses the stability of the financial system so that changes and vulnerabilities that could lead to a deterioration in the functioning of the financial system can be detected at an early stage. The main focus of the analysis is on the five major banks in Sweden (Danske Bank, Handelsbanken, Nordea, SEB and Swedbank) and on the markets and infrastructure that are important for their funding and risk management.
- In some cases the Riksbank recommends specific measures to counteract risks. These recommendations may be based on current economic developments. But they may also relate to more structural circumstances and stem from current regulatory issues. The recommendations can be aimed at banks and other market participants, as well as at legislators and other authorities.

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IN BRIEF – The Riksbank's stability assessment

Strong economic recovery in Sweden and abroad, but some slowdown in growth is expected going forward. The Swedish financial system is working well. **Credit supply has been maintained** and important **funding markets are working satisfactorily**.

The risks to financial stability are still elevated. In addition to the uncertainty associated with the pandemic as such, the problems of supply chains and rapidly rising energy prices may continue to disrupt economic activity. There is also uncertainty about future interest rates and possible effects on asset prices that could lead to increased market turbulence. **Household debt has also continued to increase.**

Monetary policy needs to remain expansionary for inflation to be persistently close to the target going forward. At the same time, overall economic policy must factor in that **the vulnerabilities in the financial system are growing**. The Riksbank therefore **supports** the raising by FI of the **countercyclical capital buffer**, and considers it important that FI continues to raise the buffer level.

The high level of household indebtedness calls for broad reforms in **housing and tax policy**, and it is problematic that these are still lacking. New macroprudential policy measures may therefore need to be introduced, or the measures already implemented may need to be tightened going forward. Macroprudential policy measures need to **limit households' scope for borrowing or reduce their interest-rate sensitivity**.

As the economic situation improves, the **temporary easing of bank regulation needs to be withdrawn, both in Sweden and abroad**. Globally agreed standards such as **Basel III need to be implemented in a full**, timely and consistent way, without being watered down.

Measures are needed to **improve the functioning of the corporate bond market** and to **manage the liquidity risks of investment funds.** The Riksbank supports FI's work towards a standard for a Swedish benchmark bond and FI's proposals for changes in fund legislation.

It is important that market participants **use the SWESTR** reference rate **for financial contracts** so that the Swedish markets keep pace with developments in the rest of the world.

To improve resilience to cyber attacks, it is important that **the national cybersecurity centre's role with regard to the financial sector is clarified**.

Climate-related risks need to be incorporated into financial agents' risk analyses. In addition, banks urgently need to start reporting **standardised metrics according to TCFD recommendations**.

1 Summary of the stability assessment

Strong recovery but some slowdown in growth going forward

As a result of an improved vaccination situation and relaxed restrictions in several countries, the economic recovery was strong in Sweden and globally during the first half of the year. During the autumn, it has become clearer that component shortages and long delivery times are hampering development in the manufacturing industry. Energy prices, above all for natural gas in Europe, have also risen sharply, which, among other things, is having an impact on household consumption and parts of the industrial sector. An increased spread of infection and new lockdowns, particularly in Asia but also in Europe, are also contributing to uncertainty about global growth. Both in Sweden and abroad, the growth rate in the economy is now expected to gradually return to more normal levels.

Companies have recovered well in many countries, even if some sectors, such as the travel industry, are still lagging behind. There are few bankruptcies and, unlike in previous crises, there has not been an increase. A labour market recovery can also be seen, both abroad and in Sweden, even if employment in hard-hit sectors remains lower than prior to the crisis. The strong recovery has also led to some support measures starting to be withdrawn. For example, over the autumn, the Riksbank has terminated the lending programme introduced during the pandemic.

The remaining support measures are contributing to the expansionary financial conditions. Market interest rates remain low and asset prices, of both financial and real assets, are at high levels, although some slowdown has occurred during the autumn. In Sweden, both households and companies are borrowing at very low interest rates. Lending to households is increasing faster than previously.

The major banks in Sweden continue to have good profitability and provisions for loan losses are now down to their pre-pandemic level. The banks have both ample liquidity, partly due to the support measures, and a margin down to the capital requirements. The opportunities of companies to fund their operations via banks or via borrowing in the securities market are good. There are no signs of a credit crunch. The financial infrastructure is working well and availability in the systems is good.

The risk level remains elevated

Uncertainty about the economic consequences of the pandemic has admittedly declined at pace with the recovery, but it is still uncertain how the pandemic will develop. In addition, the problems with supply chains, rapidly rising energy prices and increased geopolitical risks may still disrupt economic activity going forward. Abroad, the outlook for investors has also become less optimistic as inflation has risen and there is uncertainty about how the central banks will act. In a number of countries, longer-term interest rates have risen during the autumn and there is a risk that interest rates abroad will rise faster than previously expected. Interest rate adjustments could, in turn, affect asset prices. Even if a certain slowdown has taken place during the autumn, many asset types are highly valued. The Riksbank therefore assesses that the risk of price falls and related market turbulence has increased.

The expansionary economic policy has also led to a sharp increase in both public and private indebtedness in many countries. Interconnectedness between the government, banks and companies in individual countries has increased, not least due to government loan guarantees. Problems in one sector can therefore rapidly affect others. It is particularly risky for countries in which various agents were already heavily indebted before the crisis.

Earlier vulnerabilities in the Swedish financial system have been exacerbated

The pandemic has exacerbated vulnerabilities that have characterised the Swedish economy for a long time. One example is household debt, which is continuing to increase faster than disposable income and GDP. In addition, rising housing prices usually increase indebtedness with a certain time lag. The increase in prices seen during the pandemic may thus lead to even higher debt in the period ahead. The Riksbank continues to assess that the high and increasing indebtedness is making the Swedish economy vulnerable.

In addition to mortgages, the banks also lend extensively to commercial property companies, which are also responsible for a significant part of the outstanding volume of corporate bonds in Swedish kronor. Problems in the property sector may thereby have consequences for financial stability. Property companies, which are often highly leveraged, have continued to increase their indebtedness during the pandemic, which is making them more sensitive to changed economic conditions.

More focus on counteracting growing imbalances is needed

Bringing inflation persistently close to target will require a continued expansionary monetary policy. However, as the financial markets are now functioning better and banks and companies have good opportunities to fund their operations, the need for pandemic-related support measures has decreased. Both in Sweden and other countries, some support measures have therefore started to be withdrawn: for example, moratorium programmes and lending facilities are being terminated. However, this has taken place at a cautious pace and within the framework of an economic policy that is still highly expansionary.

However, the expansionary economic policy, combined with the falling trend in real interest rates in recent years, may entail vulnerabilities and risks in the form of debt accumulation and increased risk-taking. Now that the economy in Sweden and the rest of the world has started to recover from the crisis, it is becoming increasingly urgent to focus on how these vulnerabilities can best be managed. The most appropriate approach would be to use targeted structural measures, well designed financial regulation and macroprudential policy.

One step in the efforts to counteract the risks is FI's decision to raise the countercyclical capital buffer to one per cent. In light of the elevated risks in the financial system and the long implementation time, the Riksbank considers it important for FI to continue to raise the buffer level in the near term. Another step that has already been taken was for FI to let the temporary exemption to the amortisation requirements expire in August, according to plan.

The comprehensive support measures also create risks for moral hazard as agents can expect the financial markets and financial participants always to receive government support in the event of a crisis. To avoid an incorrect allocation of resources once the economy has returned to normal, it is important for pricing in the financial markets to reflect the increased private risk-taking. It is particularly important for market participants to understand that the specific circumstances in a crisis determine which state measures are appropriate and that they cannot always count on the authorities implementing measures.

The pace of reforms in housing and tax policy is still slow

Resolving the fundamental problems linked to the housing market and high household indebtedness will primarily need broad reforms in housing and tax policy. Examples of feasible measures include reviewing the regulations regarding the new production of housing, property tax and tax relief on interest expenditure. It is problematic that such reforms are still lacking. If they are not implemented to the necessary extent, the need for macroprudential policy measures will increase. It is not sustainable in the long term to allow risk-taking to increase.

Macroprudential policy measures need to, among other things, limit households' scope for borrowing or reduce their interest-rate sensitivity. This would reduce the risk of households being forced to make major adjustments and reduce their consumption or saving when the economic conditions change. In addition, the cost of paying off mortgages earlier needs to be reduced. This would strengthen consumer protection and give households a greater incentive to choose loans with a significantly longer interest-rate fixation period than is the case at present.

It is a cause for concern that microdata on household assets and liabilities are not collected in Sweden. Microdata are needed to improve the assessment of household resilience to shocks. It is important that this shortcoming is remedied and it is therefore positive that the Government appointed an inquiry into this matter in January 2021. The Riksbank also supports the initiative to investigate a national debt register listing all the debts of borrowers.[2] The Riksbank is also positive to the inquiry investigating how a register for tenant-owned apartments can be introduced.

The resilience of the financial system needs to be strengthened

During the pandemic, some regulations were softened, both in Sweden and abroad. As the economic situation has improved, these regulations have now gradually been tightened again. The Riksbank considers that it is now important to phase out the temporary relaxations introduced during the pandemic as planned, both in Sweden and the rest of the EU. In addition, EU Member States should introduce internationally agreed standards, such as Basel III, in a full, timely and consistent way. In a joint letter from September 2021, the Riksbank and 24 other national central banks and supervisory authorities from 20 EU Member States urged the European Commission to ensure that the proposed revised capital requirement rules comply with Basel III. On 27 October, the European Commission presented a proposal for the implementation of the last parts of Basel III in the EU (known as the 'Banking Package 2021') and it is now the basis for negotiations in the European Parliament and the Council.[3] The Riksbank recommends that the EU should not deviate from Basel III in its implementation. Strict and harmonised global regulations benefit the economy and financial stability in the countries concerned. Another important measure would be for the EU to adopt a strengthened framework to combat money laundering and terrorist financing. The European Commission's proposal, presented in July of this year, is a step in the right direction.

As a result of the EU Banking Package, Swedish capital requirement rules have recently been changed. One of these changes concerns the so-called Pillar 2 requirements, which are now divided into two parts, an adopted Pillar 2 requirement and new Pillar 2 guidance. The Pillar 2 guidance indicates how much extra capital FI believes a bank needs to cover risks that are not already covered by other requirements and to manage future financial pressures. The Riksbank believes that it is positive that, with the new regulatory framework, FI has the opportunity to impose even clearer requirements on how much capital Swedish banks shall have and that the new Pillar 2 guidance is being published by FI.

The Riksbank has long pointed to shortcomings in the Swedish market for corporate bonds. The work now being conducted by both authorities and the private sector to increase transparency, improve liquidity and increase the standardisation of issues is therefore positive. It is also important that the participants in the securities market

[2] See ”Hemställan om utredning av förutsättningarna för ett system med uppgifter om konsumenters totala skuldsituation” [Request for an investigation into the prerequisites for a system with data on the total consumer debt], 26 October 2021, Finansinspektionen and the Swedish Consumer Agency. See also SOU Fi 2021:08 ”Motverka riskfylld kreditgivning och överskuldsättning” (Counteracting risky lending and over-indebtedness).

[3] See the European Commission press release, October 2021. Banking Package 2021: (europe.eu)

apply the self-regulation concerning transparency developed by the Swedish Securities Markets Association.[4] The Riksbank supports FI's work on developing a proposed standard for a Swedish benchmark bond. The issuers also need to contribute, for example, by using credit ratings to a greater extent.

Furthermore, the Riksbank considers that investment funds investing to a great extent in relatively illiquid assets, such as corporate bonds, must make it clear to their unitholders that the holdings are not liquid in all market situations and that they therefore cannot always expect it to be possible to make immediate redemptions. In addition, the possibility of redeeming from the investment funds needs to be restricted to reflect the liquidity in the holdings better. The Riksbank supports FI's proposed amendments to fund legislation to facilitate the use of more liquidity management tools, to make it possible to offer a lower frequency of redemptions than is already allowed and to allow notice periods.[5] The Riksbank also urges the funds to comply with ESMA's guidelines for liquidity stress tests as soon as possible.[6]

In addition, the Riksbank considers quote-based reference rates, known as interbank rates (IBORs), to be insufficiently reliable. Just like many other central banks, the Riksbank has therefore started to publish a fully transaction-based reference rate, SWESTR. Around the world, transaction-based reference rates are starting to be used in financial contracts to an increasing extent. It is therefore important that market participants now start to use SWESTR for contracts in Swedish kronor so that the Swedish markets keep pace with developments in the rest of the world. The Riksbank is supporting the market's transition to SWESTR by means of analysis and dialogue with market participants. However, it falls on the market to implement the actual transition.

Global challenges are affecting the Swedish financial system

In recent years, technological developments in financial services have moved rapidly, meaning that work on financial regulation needs to be accelerated. Financial activities, regardless of whether they concern cryptoassets or other FinTech-related activities, should be regulated so that the risks they may entail for financial stability can be managed. The Riksbank therefore looks positively on the work being conducted to develop regulations and standards, including the upcoming EU regulation Markets in Crypto Assets (MiCA) for cryptoassets. It is also important to have international cooperation and coordination between authorities, as operations and thus risks are often cross-border in nature.

[4] See *Svensk Värdepappersmarknads rekommendation om transparens på den svenska obligationsmarknaden [Swedish Securities Markets Association's recommendation on transparency on the Swedish bond market]*, November 2020. Swedish Securities Markets Association.

[5] See *Likviditetsverktyg i värdepappersfonder och specialfonder* [Liquidity management tools in UCITS and special funds], June 2021, Finansinspektionen.

[6] See *Guidelines on liquidity stress testing in UCITS and AIFs*, July 2020, European Securities and Markets Authority.

International financial integration means that other areas must also continue to be harmonised. Many participants in the Swedish securities market are active in several markets. Harmonised processes are a precondition for the efficiency of operations in the different markets. Market participants have drawn up a plan to harmonise the Swedish securities market's post-trade processes with European standards. The implementation of this plan is of the greatest importance. The Riksbank, for its part, has taken strategic decisions with the goal of being able to use the Eurosystem's technical platforms, T2 and TARGET2-Securities (T2S).[7] These strategic decisions affect participants in the area of both payments and securities and will require initiatives from both the Riksbank and private agents. Sufficient resources must be allocated for this work.

To improve resilience to cyber attacks, it is necessary to work on several fronts. One important initiative in this area is the Riksbank's continued work on TIBER-SE.[8] Another initiative is that the Riksbank and FI, under the framework of the Financial Stability Council, are working on developing a cyber strategy for the Swedish financial sector. In this strategy, the national cybersecurity centre, whose aim is to coordinate and strengthen Sweden's ability to prevent, detect and manage cyber threats against Sweden, will play a crucial role. It is of great importance that the centre's role towards authorities and private agents in the financial sector is clarified. The strategy will involve new forms for information sharing on cyber incidents, clarifying that all agents must share information with each other to a greater extent so that resilience can be strengthened.

The climate-related risks caused by global warming also need to be managed in the financial sector. These include both physical risks and transition risks. The recent sharp rise in energy prices is a reminder that price movements can be substantial during the adaptation process. Banks and other financial agents must therefore incorporate climate risks into their risk analyses. Credit rating agencies must also take account of climate-related risks when rating companies.

In order for investors and lenders to be able to manage climate-related risks and fund the transition to a less fossil-based economy, they need access to accurate and comparable climate-related information. It is therefore positive that a global standard for sustainability reporting is being developed at a rapid pace.[9] It is also positive that new EU regulation introduces requirements for increased transparency.[10] The Riksbank considers that the Swedish banks should anticipate the planned requirements and immediately start to report their exposures to climate risks in accordance with TCFD recommendations, with a focus on metrics linked to climate-related risks in their balance

[7] See the news item "The Riksbank wants to use the Eurosystem's T2 and TARGET2-Securities platforms", September 2021. Last updated 23 September. Retrieved 15 October 2021. The Riksbank wants to use the Eurosystem's T2 and TARGET2-Securities platforms | Sveriges Riksbank.

[8] TIBER-SE is explained in more detail in the glossary at the end of the report

[9] See the IFRS Foundation's work on sustainability reporting. Retrieved 29 October 2021. IFRS - Sustainability-related Reporting

[10] The Disclosure Regulation (Regulation [EU] 2019/2088), The Taxonomy Regulation (Regulation [EU] 2020/852).

sheets.[11] These metrics must be standardised and the banks, within the support of the Swedish Bankers' Association for example, should therefore develop joint definitions and calculation methods for them.[12]

[11] See *Final Report Recommendations of the Task Force on Climate-related Financial Disclosures*, June 2017, Task Force on Climate-Related Financial Disclosures.

[12] To develop and report metrics such as "the amount and percentage of carbon-related assets relative to total assets" and "weighted average carbon intensity" related to asset management.

2 Risks and vulnerabilities in the financial system

In this chapter, the Riksbank presents developments in the financial system and analyses the risks and vulnerabilities that could threaten financial stability. The chapter is divided into six sections and underpins the overall stability assessment in Chapter 1.

Sweden is a small and open economy with considerable foreign trade and other cross-border operations. Swedish banks and companies obtain their funding in global financial markets and rely on free capital flows. Developments **abroad** are therefore of considerable significance for the real economy and financial stability in Sweden. Global phenomena such as cyber threats and climate change can also entail risks.

If the **corporate sector** were to develop weakly and bankruptcies increase, financial stability could be affected as a result of banks' loan losses rising. The Swedish banks are particularly exposed to the property sector.

The banks' largest borrowers are **households** and their indebtedness has increased in parallel with rising housing prices. Developments in the household sector and the housing market are therefore significant for both the real economy and financial stability.

The Swedish **banking system** is large, concentrated, interconnected, cross-border and uses global financial markets for its funding, which makes it sensitive to shocks. In addition, it plays a decisive role with regard to credit supply and other important functions in the financial system.

Other financial agents, such as investment funds, insurance companies and FinTech companies, are interconnected with other parts of the Swedish financial system, including banks. The assets managed by Swedish investment funds and insurance companies are almost as large as the entire Swedish banking sector. Their actions can amplify market movements and spread risks to other asset types and agents.

The financial infrastructure refers to systems in which payments and transactions with financial instruments are made. These systems being stable and accessible is a necessary condition for it to be possible to make payments safely and efficiently.

2.1 Developments and risks abroad

The global economic recovery continues, even if a certain slowdown has taken place recently, among other things due to new lockdowns and production disruptions. Unease over the development of inflation and expectations of tighter central bank policy have also been reflected in the financial markets. There are challenges linked to new technology, for example cryptoassets and cyber incidents. The fact that companies' exposures to climate risks are not fully reflected in risk premiums increases the risk for large price adjustments in a later phase.

Global growth is slowing and risks remain

During the first half of the year, increased vaccination levels and fewer restrictions around the world, in combination with extensive support measures, contributed to a strong economic recovery in Sweden and globally.[13] During the second half of the year, it has become clearer that component shortages and long delivery times are hampering development in the manufacturing industry. Increased infection rates and new lockdowns, above all in Asia but also in Europe, have also contributed to a slowdown in the global recovery, even though it remains strong overall. Energy prices, especially the price of natural gas in Europe, have also risen sharply, which, among other things, is having an impact on household consumption and parts of the industrial sector. Economic developments continue to be fraught with risks, whereby increased unease about inflation and rising interest rates, disruptions to supply chains and new lockdowns could impact global economic activity going forward.

Adjustment of support measures in step with economic developments

In several parts of the world, governments and central banks have started to scale back their pandemic-related support measures. In the United States, the Federal Reserve has terminated the lending facilities introduced during the pandemic and deems it appropriate to start tapering its asset purchases from mid-November onwards.[14] In September, the European Central Bank started to taper its asset purchases under the Pandemic Emergency Purchase Programme (PEPP). Market participants expect that this tapering of asset purchases will continue during the autumn. At present, there are also plans to phase out the remaining moratorium programmes in the EU by the end of the year. So far, the withdrawal of debt moratoria in the euro area has not led to any major increase in the number of non-performing loans.[15]

Lockdowns during the pandemic did not lead to the increase in the number of bankruptcies in the EU as was feared. On the contrary, a reduction in bankruptcies was observed (see Chart 1), which may be due, among other things, to the administration of

[13] See Charts A.1, A.2 and A.3 in the Chart Appendix.

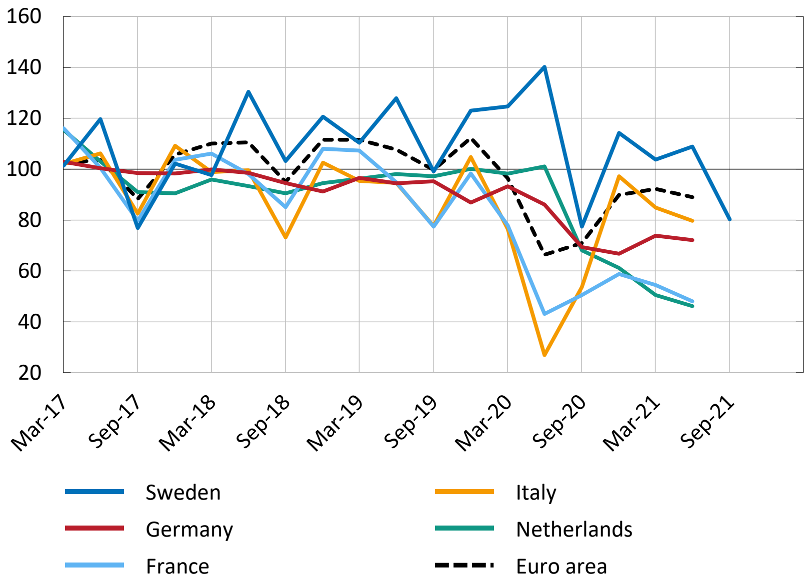
[14] See "Transcript of Chair Powell's Press Conference", 3 November 2021, Federal Reserve.

[15] See Charts A.4 and A.5 in the Chart Appendix.

bankruptcies coming to a halt in 2020, but it is clear that debt moratoria, comprehensive support measures and regulatory relief have also contributed. As support measures are withdrawn, it is likely that bankruptcy levels will at least normalise, which is to say rise from the currently unusually low levels. In Europe, for example, bankruptcies among small companies have almost returned to their pre-pandemic levels.[16] Neither can a significant rise in bankruptcies be ruled out going forward, especially for small and medium-sized enterprises in those sectors worst-hit by the pandemic, even though the risk of this decreases at pace with the economic recovery.[17]

Chart 1. Development of bankruptcies in Sweden and the euro area

Index, 2017 = 100



Note: The chart shows an aggregate for the euro area as well as observations for some individual countries that are important for Sweden's trade with the rest of the world. The index for Sweden is based on the bankruptcy statistics from Statistics Sweden, which have been converted from monthly to quarterly observations.

Sources: Eurostat and Statistics Sweden.

Measures during the pandemic entail vulnerabilities in the longer term

The public support measures during the pandemic have been decisive for staving off a financial crisis that would have worsened the economic downturn and they continue to play an important part in supporting the recovery. However, the underlying vulnerabilities that existed prior to the pandemic still remain. These include high public debt in several parts of the world and high indebtedness in the corporate and household sectors. Publicly guaranteed loans and debt moratoria have helped companies to survive the crisis but have also resulted in a continued increase in corporate indebtedness.

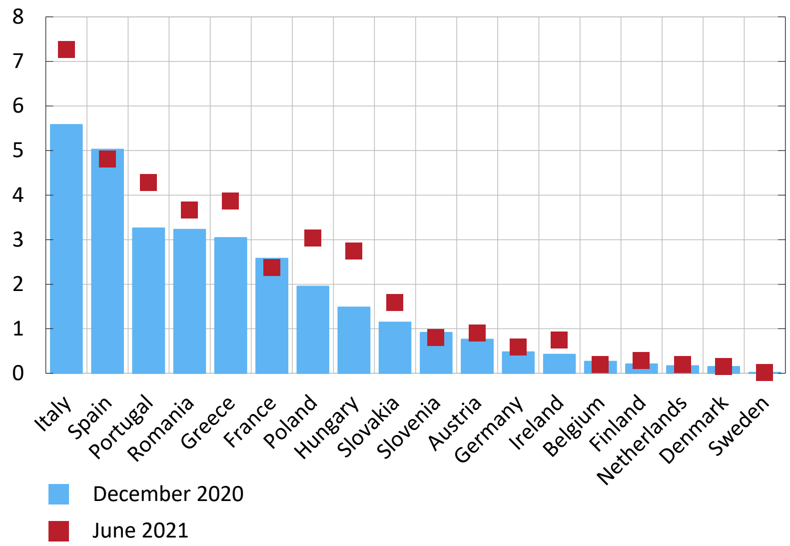
[16] See *Global Financial Stability Report*, October 2021, International Monetary Fund.

[17] See “Insolvency Prospects Among Small and Medium Enterprises in Advanced Economics: Assessment and Policy Options”, *IMF Staff Discussion Note*, April 2021, International Monetary Fund.

There is also a risk that broadly applied measures are not just providing temporary help to fundamentally viable companies but are preventing a necessary renewal of the corporate sector if they are also provided to companies without the long-term potential for survival. This counteracts structural transformation in the economy and risks slowing down the development of productivity over the long term.

In the euro area, the position of banks prior to the pandemic was poor in many cases, with low profitability, high costs and large volumes of assets with lower credit quality. Even if some banks in, for example, Italy and Greece have managed to sell some of their non-performing loans in the secondary market, these loans continue to weigh heavily on the European banking sector. In the euro area, increased loan losses risk exacerbating the problematic connection between the banking systems and public finances in some countries, something that is made worse by a significant share of banks' lending having a public guarantee (see Chart 2). For example, the volume of loans covered by public guarantees in both Italy and Spain amounted to over EUR 100 billion at the end of June.[18] As several large economies in the euro area already had elevated levels of sovereign debt when they went into the crisis, there is a risk of interest rates on government loans increasing in some countries if the above-mentioned risks materialise.

Chart 2. Loans under public guarantee schemes as a percentage of total lending
Per cent



Note: Country-specific data includes foreign subsidiaries.

Source: European Banking Authority.

High valuations may pose risks to financial stability

Over the autumn, equity price developments have slowed down slightly and there are general signs that investors have started to become more cautious.[19] Investor surveys

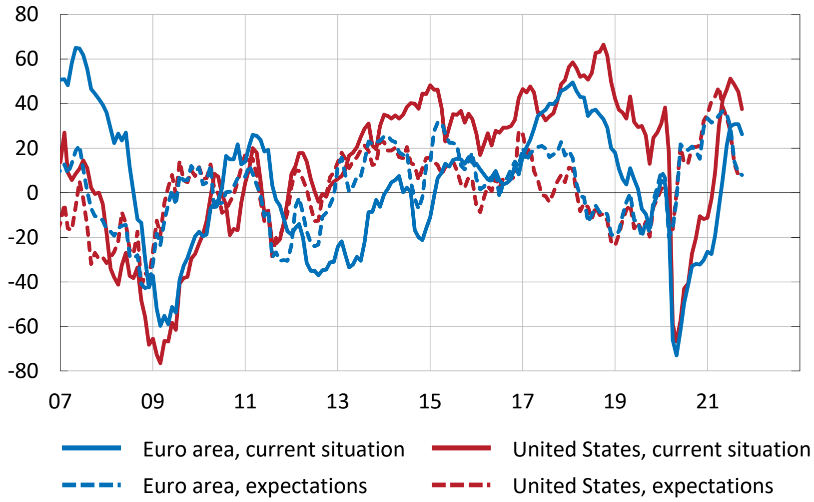
[18] See Chart A.6 in the Chart Appendix.

[19] See Chart A.7 in the Chart Appendix.

indicate that the current market situation is still perceived to be strong, but that expectations of the future have become less optimistic (see Chart 3). This is true of both the United States and Europe. The development of inflation, central bank actions concerning asset purchases, virus mutations and developments in China are some examples of causes for concern that investors consider could trigger larger price falls in the markets in the period ahead if they lead to the risk outlook being re-evaluated.[20] Recently, for example, the turbulence around Chinese property companies, especially Evergrande, has triggered price falls and increased volatility in some markets.

Chart 3. Sentix investor confidence

Net balance



Note: Sentix investor confidence is a monthly survey measuring risk sentiment among investors in different countries and regions, as well as globally. Higher values indicate optimism and lower values pessimism. “Expectations” refer to the next month.

Source: Macrobond.

The recent decline in investor confidence has not yet been fully reflected in the fixed-income markets. Risk premiums on corporate bonds, for example, remain low.[21] In addition, long-term government bond rates have risen slightly in many regions during the autumn, which probably reflects expectations among investors regarding rising inflation and tighter central bank policy.[22] How the central banks choose to act regarding both interest rate policy and asset purchases, and how communication from the central banks is interpreted by investors will be important for the development of the financial markets in the period ahead. When the level of interest rates is low, valuations tend to be particularly sensitive to new developments in monetary policy.[23]

Many financial assets are still relatively highly valued, despite signs of falling investor confidence. This is true not least for certain stock markets around the world. Chart 4

[20] See for example *BofA Global Fund Manager Survey*, October 2021, Bank of America.

[21] See Chart A.8 in the Chart Appendix.

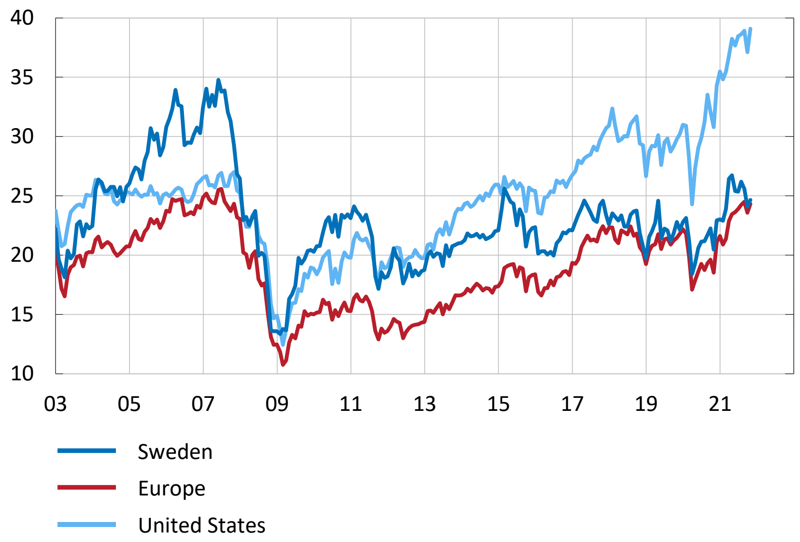
[22] See Chart A.9 in the Chart Appendix.

[23] See, for example, “The news sensitivity of high equity prices when long-term rates are low” in *BIS Quarterly Review*, March 2021, Bank for International Settlements.

illustrates valuations for a few different countries and regions in the form of equity prices in relation to earnings. In the United States, valuations are now significantly higher than before the financial crisis broke out in 2008, while, in Europe, they are at about the same levels now as then. High valuations may indicate a greater risk for price falls. How potential price falls affect financial stability much depends on which agents are exposed to the relevant asset-type and to what extent, as well as on how various agents and markets are interconnected.

Chart 4. Cyclically adjusted P/E (CAPE) ratios

Ratio



Note: Normal P/E (Price-to-Earnings) ratios show the price of a share in relation to the company's earnings per share at a certain point in time. The CAPE ratio is a cyclically adjusted P/E ratio in which the 10-year average earnings per share is used in the denominator. The ratios are based on the region and country-specific MSCI stock index.

Source: Barclays.

Increased exposure to cryptoassets may lead to rapid accumulation of risks

The market for cryptoassets continues to grow, even though price developments are very volatile.[24] Bitcoin, for example, is still considerably more highly valued than before the coronavirus pandemic broke out (see Chart 5). A large proportion of cryptoassets primarily function as speculative investments. Currently, there are indications that the financial institutions' direct exposures to these assets are small, both internationally and in Sweden, but the statistics are meagre as regards indirect exposures.[25] On the household level, data on holdings in cryptoassets is even more limited,

[24] Cryptoassets are often referred to as cryptocurrencies. However, cryptoassets is a more appropriate term, as they are, among other things, currently used more for speculation than as money. They also lack the institutional and legal framework of national currencies.

[25] See "Consultative Document on Prudential treatment of cryptoasset exposures", June 2021, Bank for International Settlements.

as ownership of cryptoassets is essentially anonymous.[26] At the same time, the lack of information makes it difficult for authorities to follow the rate at which exposures to cryptoassets are growing and the spillover risks this may entail.

In the cryptoasset area, there is a sub-group called stablecoins, which can be a misleading term, since stability depends, among other things, on how liquid and hedged the underlying assets are.[27] By August of this year, the market for stablecoins had grown to about USD 110 billion, from about USD 60 billion in March.[28] However, these are still limited volumes in relation to the entire market for cryptoassets. To date, stablecoins have mainly been used for purposes other than as a means of payment, for example to switch to other more speculative cryptoassets. If, for example, a large technology company or "BigTech" were to issue a stablecoin, it could rapidly grow in size.[29] Such a stablecoin would probably be linked to one of the major currencies and could make it difficult for central banks in countries, especially developing countries, with smaller currencies in particular to conduct monetary policy and promote financial stability.[30]

[26] FI has carried out a survey of trade in financial instruments with cryptoassets as underlying asset. Over the years 2016 to 2020, the number of Swedes holding these instruments peaked at about 35,000. See *Finansiella instrument med kryptotillgångar som underliggande tillgång* [*Financial instruments with cryptoassets as underlying asset*], *FI-tillsyn* no. 21, February 2021, Finansinspektionen.

[27] Stablecoins are cryptoassets whose value is tied to the value of other assets, such as one or more national currencies or other financial assets. One idea with stablecoins was that they could act as a means of payment.

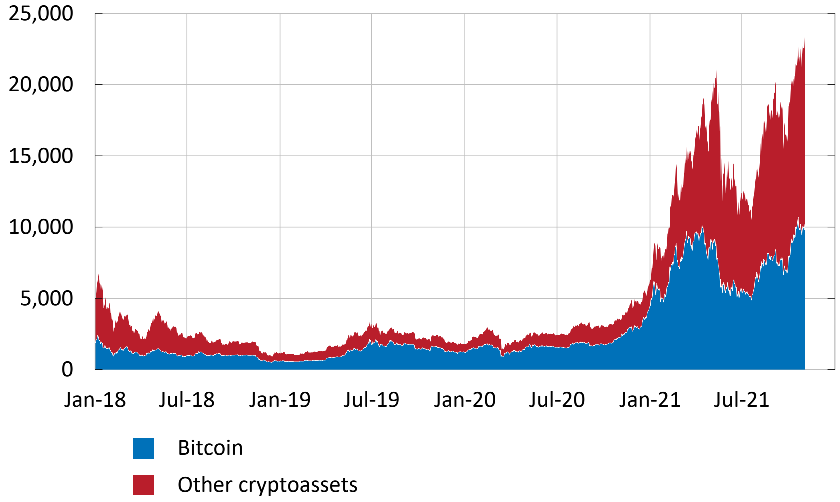
[28] See speech by F. Panetta (2021), 8 October 2021, ECB. Stay safe at the intersection: The confluence of big techs and global stablecoins (europa.eu)

[29] For more information on other types of risk that stablecoins may cause, see *Payments Report* 2021, Sveriges Riksbank.

[30] See for example, *Global Financial Stability Report*, October 2021, International Monetary Fund, and "Investigating the impact of global stablecoins", October 2019, Bank for International Settlements.

Chart 5. Market capitalisation of cryptoassets

SEK billion



Note: Refers to market values globally. “Other cryptoassets” includes several thousand different assets (including stablecoins and tokens). The largest assets in this category are Ethereum, Cardano and Tether, for example.

Source: Macrobond.

Cryptoassets are not deemed to entail any systemic risks at present.[31] The market for cryptoassets is still relatively small in comparison with the entire financial system but the interconnection with the traditional financial system is increasing.[32] The regulation of cryptoassets is lacking or not comprehensive in many jurisdictions. This may lead to difficulties for authorities in managing the risks of cryptoassets and allow issuers of cryptoassets to circumvent the existing regulations governing corresponding services offered by more traditional financial agents. For example, the underlying collateral for certain stablecoins is largely comprised of short-term assets, similar to a money market fund, but without complying with the same requirements as these funds do. However, the European Commission has recently taken several initiatives to strengthen the regulation of cryptoassets, for example through the new regulation Markets in Crypto Assets (MiCA).[33] Another initiative contains proposals for regulations to improve customer due diligence and prevent cryptoassets from being used for money laundering and terrorist financing.[34] Work is also under way in relation to

[31] See for example Global Financial Stability Report, October 2021, International Monetary Fund.

[32] See speech by J. Cunliffe (2021), 13 October 2021, Bank of England. Is ‘crypto’ a financial stability risk? – speech by Jon Cunliffe | Bank of England

[33] Proposal for a Regulation of the European Parliament and of the Council on markets in the field of crypto assets and amending Directive (EU) 2019/1937, COM (2020) 593 final, September 2020. The regulation has not yet entered into force.

[34] Proposal for a regulation of the European Parliament and of the Council on the prevention of the use of the financial system for the purposes of money-laundering or terrorist financing, COM(2021) 420 final, July 2021.

cryptoassets in other international fora, for example within the Bank for International Settlements (BIS).[35]

Ransomware attacks continue to increase in number and extent

A clear global trend has emerged in recent years whereby criminal networks use ransomware in cyber attacks to an ever-increasing extent. This has become a business model for organised cyber-crime, primarily aimed at organisations with time-critical operations.[36] As an example, the FBI notes an increase of 20 per cent in the number of reported ransomware crimes between 2019 and 2020.[37] The European Network and Information Security Agency (ENISA) also notes an increase.[38] Recent examples include the cyber attack on a service provider to the Coop supermarket chain in Sweden and the attack on the US oil pipeline company Colonial Pipeline.[39]

The Coop incident is an example of how payments can be affected even if the financial system itself is not attacked. The requirements imposed on financial companies to get IT systems up and running again after an outage are high. Indeed, they are generally higher than for most other companies. For example, financial market infrastructures are required to be able to return to normal operations within two hours.[40] This can be compared to the examples above where the recovery time has been about a week. Such long outages, and even significantly shorter ones, in the financial system could have severe consequences for financial stability. The Riksbank has also pointed this out on earlier occasions.[41]

A general difficulty in the work of strengthening resilience to cyber risks is the lack of reliable statistics on cyber incidents. This is a global problem that also exists in the Swedish financial sector.[42] If society is to tackle this problem, it is important for the af-

[35] For example, see CPMI-IOSCO (2021), "Application of the principles for Financial Market Infrastructures to stablecoin arrangements", October 2021, Bank for International Settlements and International Organization of Securities Commissions, and *Regulation, Supervision and Oversight of "Global Stablecoin" Arrangements: Progress Report on the implementation of the FSB High-level Recommendations*, October 2021, Financial Stability Board.

[36] Such organisations can be everything from hospitals to financial and energy supply companies. See for example, *The cyber threat against the Danish financial sector*, December 2020, Danish Centre for Cyber Security.

[37] See *Internet Crime Report 2020*, March 2021, Federal Bureau of Investigation and *Internet Crime Report 2019*, February 2020, Federal Bureau of Investigation.

[38] See *ENISA Threat Landscape Ransomware*, October 2020, European Union Agency for Cybersecurity.

[39] See, for example, the news item "Kaseya Ransomware Attack: Guidance for Affected MSPs and their Customers", July 2021, Cybersecurity and Infrastructure Security Agency. Last updated 11 July 2021. Retrieved 15 October 2021, https://us-cert.cisa.gov/kaseya-ransomware-attack and the news item "FBI Statement on Compromise of Colonial Pipeline Networks", May 2021, Federal Bureau of Investigation. Last updated 10 May 2021. Retrieved 15 October 2021, https://www.fbi.gov/news/pressrel/press-releases/fbi-statement-on-compromise-of-colonial-pipeline-networks.

[40] See *Principles for financial market infrastructures*, April 2012, CPMI-IOSCO.

[41] See Financial Stability Report, May 2021, Sveriges Riksbank and L. Elestedt, U. Nilsson and C-J. Rosenvinge (2021), "A cyber attack can affect financial stability", *Economic Commentaries,* No. 8. Sveriges Riksbank.

[42] See for example "Cyber Risk and Financial Stability: It's a Small World After All", 2020, International Monetary Fund.

fected agents to show openness and transparency. Some information is already collected by authorities as part of companies' incident reporting. Such information can help improve knowledge of cyber incidents in Sweden.

At present, there is no sector-specific cyber security strategy for the Swedish financial sector. There is also a lack of clarity as to which roles are needed, and which players should fulfil these roles, in order to coordinate the work and strive for greater resilience to cyber risks in the Swedish financial sector. Sweden's national cyber security centre is being set up, although its future role in relation to the financial sector has not been clarified. All in all, these various factors imply risks to the financial system's collective ability to manage potential cyber attacks.

Inadequate data reporting is hampering the climate transition in the financial sector

Managing climate change is one of the greatest challenges of our time. The IPCC assesses that global emissions must be halved by 2030, compared to 2010 levels, if the goal of limiting global warming to 1.5°C is to be reachable.[43] Here, the financial sector has an important role to play in that it prices risks and mediates capital to investments.

It is important that climate risks are taken into account in the risk premiums reflected in bond rates and the price of assets and natural resources. Otherwise, price adjustments may be significant when these risks in the future need to be taken into account in a short period of time, which may affect financial stability.[44] This applies to both assets that are exposed to physical risks, such as properties, and those that are exposed to transition risks, such as loans to companies in carbon-intensive industries.[45]

The risks associated with rapid price movements is well illustrated by recent rapid energy price increases in Europe. In connection with the economic recovery, demand for energy has increased faster than supply, which has led to sharp price increases. There are several reasons why supply has not been able to match the increase in demand.[46] It is partly because European natural gas stocks are unusually low, and partly because energy production from sustainable energy sources has been low during the year. This has made Europe even more dependent on importing energy in the form of coal and natural gas. At the same time, demand for coal and natural gas in Asia has increased, which has led to Europe competing with Asia for energy supplies from Russia, among others.

The higher price of fossil fuels is not a problem in itself as it contributes to the transition towards lower emissions. However, in order for the adjustments to fossil fuel

[43] See "Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments", October 2018, IPCC.

[44] See "Climate-related risk drivers and their transmission channels", April 2021, Bank for International Settlements.

[45] Climate risks are usually divided into physical risks and transition risks. Physical risks include the risks of physical destruction due to effects of climate change, such as drought, flooding, etc., while transition risks arise as a result of the adaptation to a less fossil-based economy.

[46] See "Läget på de globala energimarknaderna" [Situation in global energy markets] week 39 2021, Swedish Energy Agency. Läget på energimarknaderna (energimyndigheten.se)

prices not to hamper economic developments, it is important that more environmentally friendly energy alternatives have the capacity to meet energy demand. The speed of the price adjustment may pose a risk in both the short and the long term. In the short term, it could lead to problems for households and companies that are not able to cope with high energy prices, which in turn may lead to demands to reduce the pace of transition, which would increase the risk of even worse longer-term consequences.

A prerequisite for pricing transition risks is the existence of a clear framework for how companies shall measure, assess and compare the risks associated with climate change. A central component in such a framework to enable comparability is that companies disclose how their business is exposed to climate risks and how they contribute to global warming according to a common standard.

In conjunction with the UN's annual climate conference (COP26) in November, the IFRS Foundation launched a governance structure for sustainability reporting which, based on the TCFD recommendations, will develop such a common standard for how companies should report climate-related information.[47] [48] To improve the availability of climate-related information, it is important to put this standard in place as soon as possible as a formal disclosure requirement for companies.

Within the EU, too, considerable work is under way to improve data access and the scope for pricing climate risks. The so-called Disclosure Regulation and Taxonomy Regulation will come into force on 1 January 2022.[49] These impose requirements on companies to disclose in regular reports how sustainability is considered in their own business and the businesses they finance. They also require companies to classify their business based on what share of it fulfils the requirements for being environmentally sustainable.[50]

[47] See the news item “Global sustainability disclosure standards for the financial markets”, November 2021, IFRS Foundation. Retrieved 3 November 2021, IFRS - Global sustainability disclosure standards for the financial markets

[48] The Task Force on Climate-related Financial Disclosures (TCFD) has developed voluntary recommendations for the disclosure of climate-related risks and opportunities. See also footnote 10 in Chapter 1.

[49] The Disclosure Regulation (Regulation [EU] 2019/2088), the Taxonomy Regulation (Regulation [EU] 2020/852). Parts of the Disclosure Regulation have already come into force. Since March this year, certain types of financial market participants have been obliged to, for example, provide sustainability information on their website.

[50] See the news item “Nya regler om hållbarhetsrapportering” [New rules on sustainability reporting], December 2020, Finansinspektionen. Nya regler om hållbarhetsrapportering | Finansinspektionen.

2.2 Recovery in the Swedish corporate sector, but the consequences of the pandemic may take time to manage

As a result of pandemic restrictions having now been relaxed, companies in the hardest-hit sectors have continued to recover. Property companies with hotel and retail premises have noticed some improvement in their rental income. Neither has the number of bankruptcies and reconstructions increased as feared. On the whole, the funding situation for companies is good, although it differs somewhat between different sectors. Companies in certain sectors still have a long way to go before turnover is back to its pre-pandemic level. Higher indebtedness, cross-holding and higher concentration of the property stock have contributed to slightly higher risks in the property sector.

Some improvement for hard-hit sectors

Since the spring, the recovery has strengthened further in sectors that have been hardest-hit by the pandemic, for example the service sector and trade.[51] Within the service sector, however, developments have varied. For example, companies in the hotel and restaurant industry have seen some recovery while, for example, passenger transport companies, such as airlines, continue to have difficulties.[52] In the trade sector, a gradual recovery has taken place for brick-and-mortar retailers, which has also improved the situation for property companies with such commercial properties. This is explained, as for hotels and restaurants, by the fact that more people can move around in city centres and department stores as a larger proportion of the population is now vaccinated and restrictions have been relaxed. Other trade segments, such as non-durable goods and wholesale IT equipment, have managed well on the whole during the pandemic. However, for many companies with physical stores, e-commerce, which has increased significantly during the pandemic, continues to pose challenges.

Turnover in the manufacturing industry recovered rapidly from the downturn at the start of the pandemic.[53] On the other hand, many companies in the manufacturing industry are experiencing new difficulties linked to lack of components and high freight and energy prices, which may have a negative impact on the profitability of the companies. Overall, the construction industry has had a slightly lower turnover during the pandemic. But there are variations there, partly in the form of strong demand for housing and infrastructure but weaker demand for commercial construction.[54]

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[51] See Chart A.10 in the Chart Appendix.

[52] See *Production Value Index*, August 2021, Statistics Sweden.

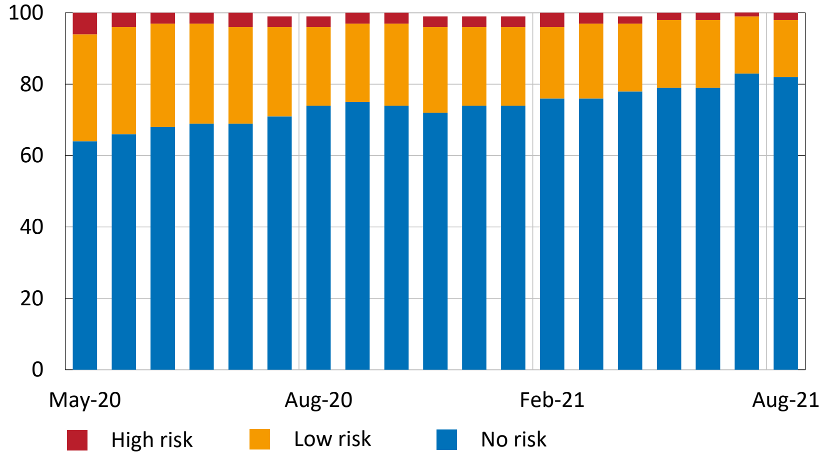
[53] See *National Institute of Economic Research's extra measurement*, August 2021, National Institute of Economic Research.

[54] See *The Riksbank's Business Survey*, September 2021, Sveriges Riksbank.

The number of bankruptcies and reconstructions has continued to be in line with or slightly lower than during the years prior to the pandemic (see Chart 1). This is partly a consequence of the support measures aimed at companies. The trend therefore differs from what it has looked like during previous crises, when the number of bankruptcies increased, such as during the global financial crisis in 2008-2009 or the 1990s crisis in Sweden.[55] In addition, fewer and fewer companies think they risk having to close down their operations (see Chart 6). This is a sign that the risk of major loan losses has decreased somewhat since the spring. However, the constant renewal and transition in the business sector means that a certain proportion of companies go bankrupt anyway. To reflect this, therefore, the number of bankruptcies is expected to increase somewhat to its pre-pandemic level, despite the economic recovery.

Chart 6. Share of companies at risk of closure

Per cent



Note: Consists of responses from the National Institute of Economic Research's extra measurement, made between May 2020 and August 2021, in which companies in various sectors answered the question: "Based on the current situation, how do you assess the risk of your company having to close down its operations?". The responses are weighted by the value added of the manufacturing industry and the number of employees in other sectors.

Source: National Institute of Economic Research.

Many companies have used the support measures launched during the pandemic, such as short-time work allowance, reorientation support, and loan guarantees under the government guarantee programme for companies.[56,57] The companies have also used the aid measure providing the possibility of deferment of payments, employer contributions and VAT. In October 2021, total outstanding tax deferment amounted

[55] See *Financial Stability Report 2021:1*, Sveriges Riksbank.

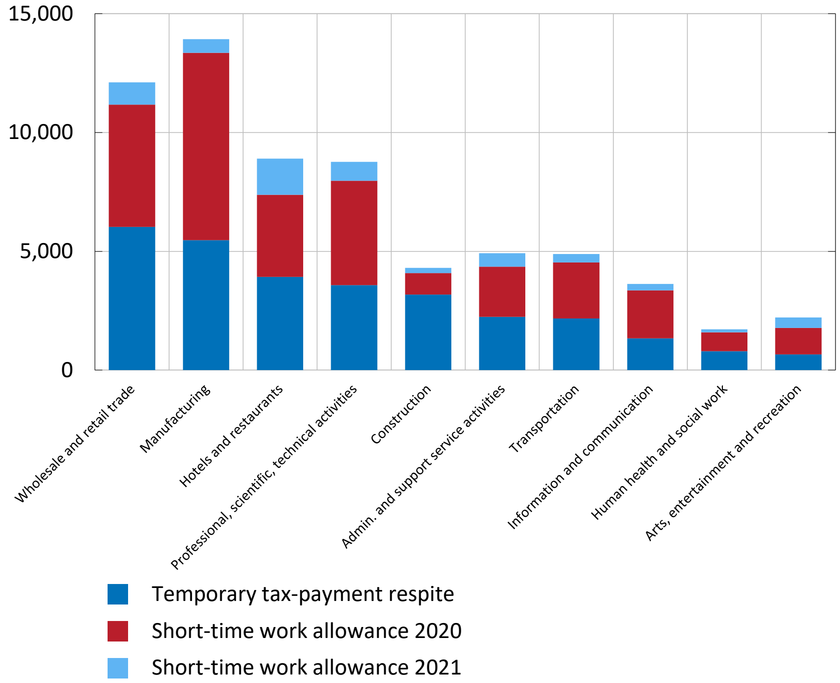
[56] Source: Swedish Agency for Economic and Regional Growth, Swedish Tax Agency and Swedish National Debt Office.

[57] The state loan guarantee programme ran until 30 September 2021 and involved the Swedish National Debt Office pledging a guarantee of up to 70 per cent of a loan amount. The guarantee could be used by credit institutions, which reported to the Swedish National Debt Office which loans they chose to place under guarantee. The guarantees for the loans taken out within the programme are valid for up to three years. Compared to other EU countries, government credit guarantees have been used relatively little in Sweden, see Chart 2.

to SEK 31 billion. Companies in the trade sector were responsible for the largest share of this (see Chart 7). The support measures during the pandemic have helped companies to manage their liquidity situation. As the recovery progresses, fewer and fewer companies have needed to utilise the support measures. The companies that have deferred their tax payments shall going forward make regular payments based on the period and type of tax concerned. Companies shall have repaid their taxes no later than by January 2024.[58] This means that many companies need to increase their turnover in order to cope with tax payments. Companies that have used their liquidity buffer during the crisis to survive may also need to build up the buffer to cope with future investments.

Chart 7. Companies' use of some of the state support measures

SEK million



Note: The sectors are sorted by outstanding tax respite, which means that tax respites paid or due are not covered. The chart covers the ten sectors with the most outstanding tax respite as of 13 October 2021. The amount for short-time work allowance refers to the net amount granted by the Swedish Agency for Economic and Regional Growth. Short-time work allowance means that employers can reduce employees' working hours and receive support from the state to cover large parts of the cost. Data on short-time work allowance retrieved on 2 November.

Sources: Swedish Tax Agency and Swedish Agency for Economic and Regional Growth.

[58] January 2024 refers to companies that report VAT on a full-year basis. With regard to other taxes, such as employers' contributions, and to companies that report VAT on a quarterly or monthly basis the deferred taxes shall be paid back earlier. However, the final repayment date may be postponed, as the Ministry of Finance referred a proposal in September 2021 which, among other things, allows the repayment period to be extended by a further 15 months.

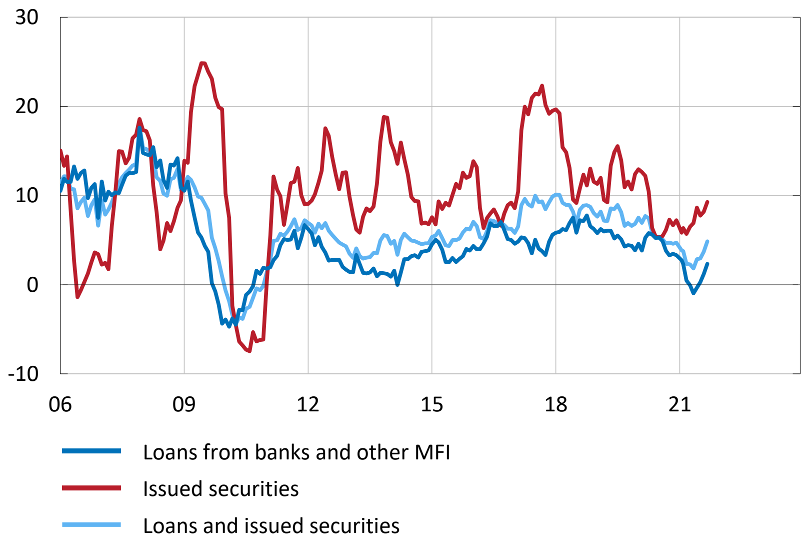
Good overall funding situation for companies

In general, companies continue to have good opportunities to refinance old loans and take out loans for new investments via monetary financial institutions (MFIs) and the capital market.[59] Loan costs for both bank loans and bonds are more or less at the same low levels as before the pandemic. On the other hand, total lending to companies during the year has grown relatively slower and in September 2021, the annual rate was 5 per cent (see Chart 8). Growth in lending from MFIs is still subdued, while corporate funding via the capital market has gradually increased.

Despite the recovery and generally good funding opportunities, the situation still differs depending on company size and sector. Large companies, and companies associated with greater risks to financial stability, have continued to increase their debt. This is particularly true of companies in the commercial property sector that, taken together, have increased their total loans by 8 per cent between September 2020 and September 2021. At the same time, the total loan volume has decreased or been relatively unchanged among companies in those sectors hardest hit by the crisis. In general, small companies and companies in the service sector say that it is more difficult to find funding compared with before the pandemic.[60]

Chart 8. Corporate sector borrowing

Annual percentage change



Note: Refers to non-financial corporations. All currencies. Lending by monetary financial institutions to non-financial corporations adjusted for reclassifications and bought and sold loans. Non-financial corporations' issued securities are adjusted for reclassifications and currency impact. Issued securities are collected from the Swedish Securities Database (SVDB). Data up to the end of September 2021.

Source: Statistics Sweden.

[59] MFIs include banks, mortgage institutions, financial institutions, municipal and corporate-financed institutions and monetary securities companies.

[60] See Economic Tendency Survey October 2021, National Institute of Economic Research.

Importance of market funding has increased during the pandemic

One reason why large companies and commercial property companies in particular are increasingly financing their activities in the capital market is that over time it has become an increasingly cheaper form of financing compared to bank loans. The shift from bank to bond loan spreads the credit risk among more investors. In this way, increased bond funding can be positive from a stability perspective. However, corporate market funding also entails risks. For example, companies may encounter difficulties in refinancing their loans if prospects in their own sector change significantly or if turmoil arises in the financial markets.

Many companies that obtain funding in the capital market let credit rating agencies assess their credit risk. The companies then receive a credit rating which makes it easier for investors to decide whether they can or wish to buy the commercial papers or bonds issued by the company, even though investors still need to perform their own analysis of the company. The share of the outstanding volume of corporate bonds where the company or the individual bond has a credit rating amounts to about 75 per cent (see Chart 9). This is marginally higher than one year ago.[61] A high proportion of credit ratings helps to increase transparency in the market.

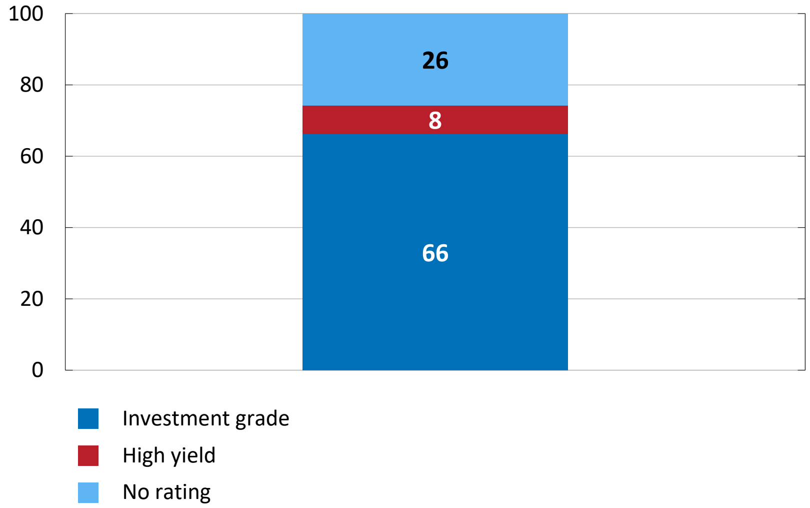
The Swedish market is characterised by relatively small bond issues and short-term bonds. As a result of these limitations, some Swedish companies have chosen to also issue bonds in other markets and in other currencies, especially in euro. Since the euro market requires the issuer to have a credit rating to a greater extent than the Swedish market, the increased proportion of corporate bonds with a credit rating among Swedish issuers may have contributed to the fact that more have issued bonds in euro.

A key aspect of financial stability is companies having good access to credit both in normal times and in times of crisis. Historically, the supply of loans in foreign bond markets has varied less with the business cycle than in the Swedish bond market.[62] This is partly because there are more and larger investors in bond markets abroad than in Sweden. It is positive that Swedish companies are diversifying their investor base and have better opportunities to obtain funding over the whole business cycle.

[61] See S. Wollert (2020), "Swedish corporate bonds during the coronavirus pandemic", *Staff memo,* October, Sveriges Riksbank.

[62] See *Kan obligationsmarknaden dämpa kreditcykeln?* [*Can the bond market slow down the credit cycle*], FI-analys No. 23, October 2020, Finansinspektionen.

Chart 9. Credit ratings for corporate bonds issued in Swedish kronor
Per cent



Note: Refers to share of outstanding volume of corporate bonds issued in Swedish kronor that each have a credit rating. Investment Grade is the higher credit rating category and corresponds to a credit rating from AAA/Aaa to BBB-/Baa3. High Yield is BB+/Ba1 and below.

Source: Bloomberg.

When the capital market grows in size and significance for corporate credit supply, its smooth functioning becomes increasingly more important. As the Riksbank has previously pointed out, there are several structural flaws in the Swedish corporate bond market, such as a lack of liquidity and transparency, which can hamper its functionality. Although the market is now functioning satisfactorily, many of the flaws still remain. This poses a risk that market functionality may deteriorate again in a situation of increased financial stress. It is therefore important to improve the functionality of the Swedish corporate bond market.

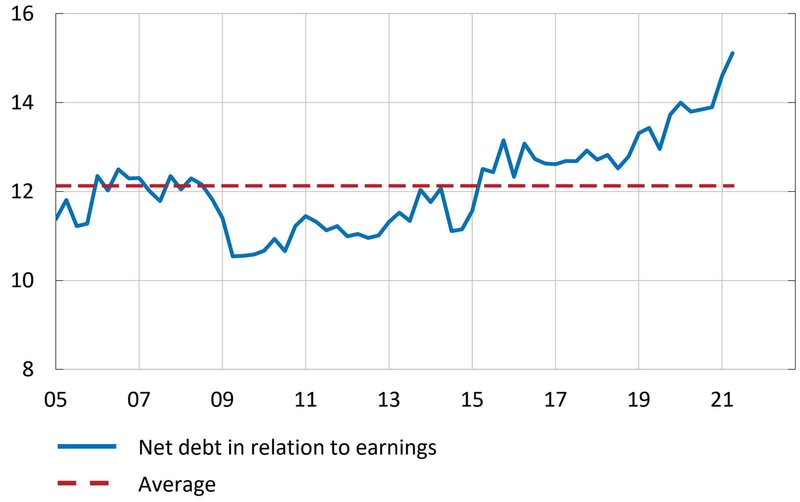
Continued high risks in the commercial property market

The property sector is capital-intensive and responsible for about 50 per cent of banks' exposure to non-financial corporations and 50 per cent of the outstanding volume of corporate bonds in Swedish kronor. Shocks in the property sector can therefore affect financial stability. The Riksbank has previously pointed out the risks linked to the large loans of property companies that have also gradually increased recently. These risks, such as failure to refinance or higher interest costs, did not materialise during the pandemic. This is partly explained by extensive support measures, for instance to tenants, and continued low interest rates. However, the risks have continued to rise due, in part, to property companies having increased their debt relative to their earnings (see Chart 10). This makes property company cash flows even more sensitive to rising interest rates.[63] In addition, the yield requirements on several types of property, such as housing and logistics, have further decreased. This also increases the risk of larger price falls if interest rates were to rise sharply.

[63] See *The Commercial Real Estate Market and Financial Stability*, May 2019, Finansinspektionen.

Chart 10. Debt of property companies in relation to their earnings

Ratio



Note: Refers to the volume-weighted ratio for 34 commercial property companies, where some real estate companies are added over time. The ratio is calculated by means of companies' interest-bearing liabilities less cash and cash equivalents relative to their operating income, volume-weighted. Operating income is the companies' earnings before interest income and interest expense, taxes, depreciation and amortization (EBITDA). The data covers the period up to the end of the second quarter of 2021.

Sources: Sedis and the Riksbank.

New trends can create a more vulnerable property market

The pandemic has led to both households and companies changing their behaviours and preferences. Although it is difficult to draw any major conclusions about the long-term consequences, this has helped to accelerate structural changes in the property market and new major changes in the longer run cannot be ruled out.

The transition from brick-and-mortar retail to e-commerce has been accelerated somewhat as a result of previous restrictions. If the reinforced preferences of households for e-commerce persist, or further strengthen, demand for certain retail premises may decline and lead to lower rental income and falling property values. At the same time, the increased e-commerce has contributed to a higher demand for logistic properties, both in city centres and close to logistic nodes. This has boosted the values of such properties.

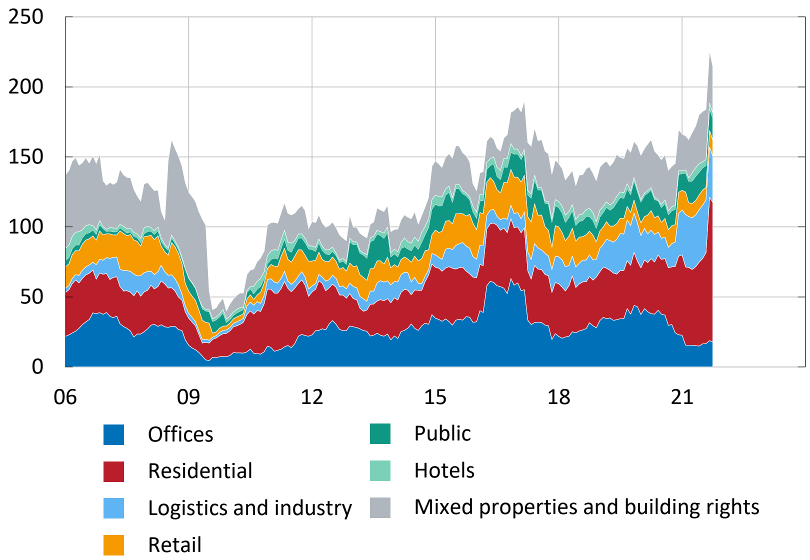
The pandemic has also led to new ways of working that may, in the longer run, cause major changes in how companies use office premises. Greater distances between work stations and more meeting rooms may lead to a higher demand for office space, while increased teleworking may have the opposite effect. What the aggregate effect will be remains to be seen as tenancy agreements are renegotiated. If the net effect is reduced demand for office space, it may lead to more vacant properties and lower rent levels. This would have a negative effect on property values, which may ultimately impair financial stability.

As a result of low interest rates and good access to funding, interest in commercial properties has been high in recent years. Transaction volumes in the commercial property market in 2021 have been at record levels, which is partly due to several buyouts of both listed and other property companies (see Chart 11). These buyouts have resulted in a few increasingly large property companies, which concentrates the property stock to fewer owners.

Some companies have also continued to make large equity investments in other property companies, in the search for new ways of increasing their earnings via indirect exposure to other property segments and geographical areas.[64] This has led to substantial cross-holding among different property companies, which may increase the risk of conflicts of interest, restrict competition and reduce transparency in the property market. In a crisis, large-scale cross-holding can also reduce the scope for property companies to safeguard adequate funding via the stock market. In a crisis situation, larger shareholders, that are themselves property companies and are exposed to the same shock, probably need to safeguard liquidity primarily in their own company. This may make them less willing to offer such liquidity to the firms in which they have made equity investments. This would increase the pressure on banks or investors in the bond market to supply such liquidity.

Chart 11. Transaction volumes in the commercial property market

SEK billion



Note: Refers to the transaction volume in various property segments, measured as property and company values per property segment, rolling 12-month total. Mixed properties are properties that can contain two or more property segments.

Source: Catella.

[64] Diversification normally leads to reduced risk. However, a disturbance in the commercial property market would affect all segments and geographical areas, which means that diversification does not have the significant risk reduction that might otherwise be the case.

2.3 High and growing household debt constitutes a major vulnerability in the Swedish economy

Relatively good income growth, rising asset prices and continued low interest rates have helped to improve the economic situation for households. However, debt is continuing to increase from an already high level. Households currently have a good debt-servicing ability but, if interest rates rise, households may need to spend a significant proportion of their income on interest payments. The risks inherent in high household indebtedness are deemed to have increased during the pandemic, making the Swedish economy vulnerable.

Households' economic situation is continuing to improve

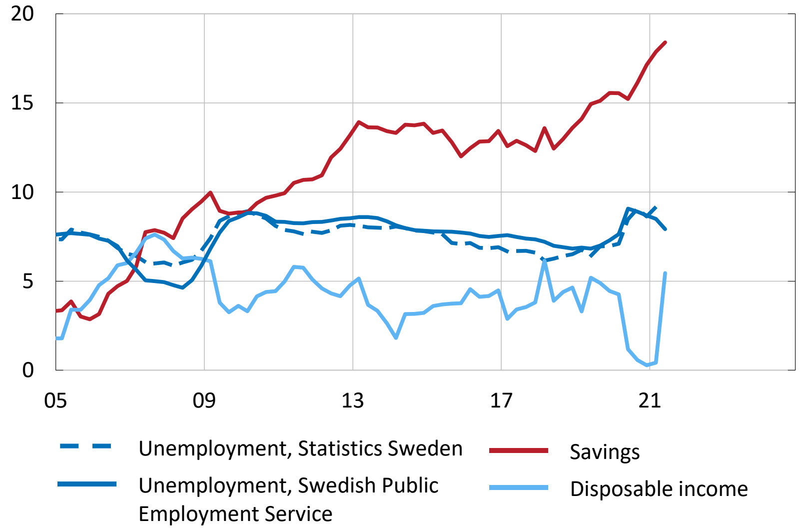
The Swedish economy has recovered rapidly and the economic situation for households continues to improve as the negative economic effects of the pandemic subside. Unemployment has fallen back slightly but is expected to remain on an elevated level for some time yet. In some of the sectors that have been most badly impacted, employment has recovered rapidly but, in other sectors, it is still lower than before the crisis.[65]

Higher employment in the labour market, combined with higher income from capital, has contributed to relatively good income growth for households (see Chart 12). After a period of lower income, real disposable household income increased by just over 5 per cent in the second quarter of 2021 compared with the same period in 2020. At an aggregated level, the economic situation of households has also improved due to their assets having increased faster in value than their debts in recent years. However, not all households have been able to benefit from the rising asset prices. For households outside the housing market, the rapidly rising housing prices have made it more difficult to buy a home.

[65] See also "Long-term effects of the pandemic on the Swedish economy", article in Account of Monetary Policy 2020, March 2021, Sveriges Riksbank.

Chart 12. Development of unemployment, disposable income and savings in the household sector

Per cent



Note: Savings refer to total savings and are expressed in relation to disposable income. Disposable income refers to annual growth in total net income rolling over four quarters. Unemployment can be calculated in different ways. The chart refers to unemployment according to Swedish Public Employment Service (solid line) and to Statistics Sweden's Labour Force Survey, LFS (broken line). In January 2021, the LFS was adapted to the EU's new directive for labour market statistics. These changes involved a time series break. For details of how the adjustments have affected the measure of unemployment, see "The LFS reorganisation and the Riksbank's analysis of the labour market", article in *Monetary Policy Report* February 2021, Sveriges Riksbank.

Sources: Swedish Public Employment Service, Statistics Sweden and the Riksbank.

Housing prices are continuing to rise, but at a slower pace

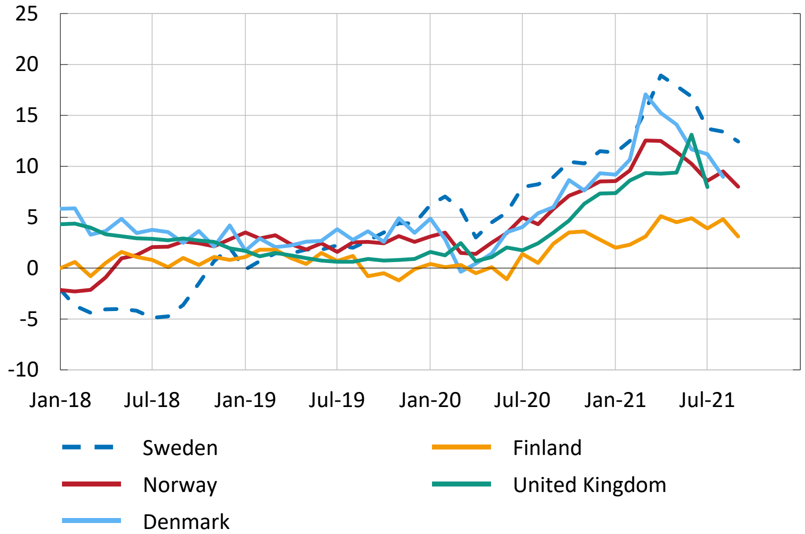
From the beginning of the pandemic in March 2020 until the end of September 2021, housing prices have increased by just over 19 per cent. The annual rate of increase decreased slightly in 2021 but remains at a high level.[66] Slightly slower price growth can also be seen in other countries, even though different countries are in different phases (see Chart 13). Price growth is following approximately the same pattern throughout Sweden, although there are regional differences. For example, prices have risen most in Malmö, both for tenant-owned apartments and single-family houses.[67] In general, prices for single-family houses have increased more than tenant-owned apartments during the pandemic.

[66] See Chart A.11 in the Chart Appendix.

[67] See Chart A.12 in the Chart Appendix.

Chart 13. Development of housing prices internationally and in Sweden

Annual percentage change



Note: Housing prices for Finland, Sweden, Norway and the United Kingdom refer to prices for both single-family houses and tenant-owned apartments. Housing prices for Denmark refer to prices for single-family houses. The series are seasonally adjusted.

Sources: Macrobond and national statistics agencies.

Income and interest rates, which normally affect housing prices to a great extent, are not considered to be the main driving forces behind the rapid price upturn during the pandemic. Instead, it is probably the unusual economic effects of the pandemic that are lying behind the strong development of prices. For example, it might be an effect of households having reduced their consumption and increased their savings that has provided scope for buying a home. Changed living preferences have probably also affected price developments, as larger living areas have been demanded to a greater extent. Unemployment has not risen as much among those with permanent employment during this economic downturn, in relation to historical patterns. Instead, it is mainly people with fixed-term employment who have become unemployed. These are people who, even before the pandemic, had a weak position in the housing market and more difficulty obtaining a mortgage.

The housing market has long been characterised by several structural problems. These have included a low level of construction in relation to need and population growth, especially when it comes to single-family houses. During the pandemic, demand for single-family houses has increased, at the same time as the number of single-family houses for sale has decreased further. This is one of several possible explanations for why the development of prices for single-family houses has been stronger than it has been for tenant-owned apartments during the pandemic.

In recent years, housing construction has been in parity with population growth. According to preliminary statistics from Statistics Sweden, the construction of about 34,000 residential apartments began in the first half of 2021, 66 per cent of which were rental apartments. According to Boverket (National Board of Housing, Building and Planning), the forecast number of housing starts for the whole of 2021 amounts to about 61,700. At the same time, the future need for housing is estimated at 59,000 per year until the end of 2029.[68] An increased supply of housing normally has a restraining effect on housing prices, especially in the longer run.

Household debt is continuing to rise from already high levels

Household debt has been rising sharply for a long time and is now historically high. Total debt as a share of disposable income (debt-to-income ratio) for the entire household sector, is currently about 200 per cent, which is a high level even in international comparisons. The majority of the debt is made up of mortgages and, according to FI's mortgage survey, the number of mortgagors in the eight largest banks' mortgage portfolios amounted to just over 2.2 million in 2020. Of these, about 600,000 households, or 28 per cent, had a debt-to-income ratio of over 300 per cent, of which about 130,000 households had a debt-to-income ratio exceeding 450 per cent.[69] All in all, households with a debt-to-income ratio of 300 per cent or more account for almost half of the outstanding mortgage volume.

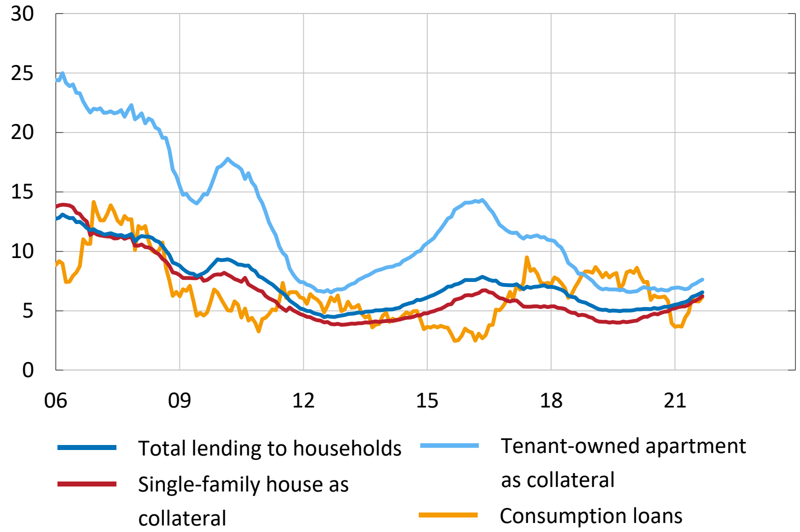
During the pandemic, debt has continued to increase more quickly than disposable household income and GDP, and is also expected to continue to rise more quickly in the period ahead, according to the Riksbank's forecast. In September 2021, the growth rate in household loans from MFIs amounted to about 6.5 per cent, which is a slightly higher growth rate than previously (see Chart 14). That debt is increasing more rapidly can in part be explained by the fact that higher housing prices have forced households to take out larger loans than previously to finance their purchases. The single-family houses and tenant-owned apartments being constructed are also contributing to increased debt as this new housing is largely financed by loans. New mortgagors have also taken greater loans than previously, in relation both to income and to the value of homes.

[68] See Chart A.13 in the Chart Appendix.

[69] See *The Swedish mortgage market*, March 2021, Finansinspektionen. See also Chart A.16 in the Chart Appendix.

Chart 14. Lending to households by collateral type

Annual percentage change



Note: Refers to loans from MFIs.

Sources: Statistics Sweden and the Riksbank.

Another factor that may have contributed to debt growth over the last year is that several of the banks have reduced their stressed mortgage rates. The stressed mortgage rate is a key parameter of a bank's credit assessment and is used to assess how well the mortgagor will be able to manage a rate rise. As a rule, the banks do not approve mortgages if there is a deficit in the cash flow calculation they make when somebody applies for a mortgage. Several banks currently use a stressed mortgage rate of 6 per cent, which is, on average, almost a percentage point lower than in previous years. A lower stressed mortgage rate increases the household's scope for borrowing, which, in turn, may contribute to increased debt.

A common pattern is that loans in relation to incomes and the value of homes are relatively high early on in life, and then recede later on. This is because young people normally have lower incomes and less wealth than people in other age groups. However, the rising housing prices in recent years have meant that young people have had to take increasingly large loans to purchase a new home. For example, the average debt-to-income ratio has risen more for younger mortgagors than for older ones. They have thereby had to take increasingly larger financial risks and are more sensitive to changed economic conditions.[70]

Good debt-servicing ability but households may need to make major adjustments in their finances if interest rates rise

Despite the high level of debt among households, the low interest rates mean that household interest expenses in relation to disposable income (the interest to income ratio) are low. The high level of saving is also giving many households a buffer to deal

[70] See N. Olsén Ingefeldt and V. Thell, "Young adults and the housing market", *FI Analysis 19*, November 2019, Finansinspektionen and *The Swedish Mortgage Market*, March 2021, Finansinspektionen.

with a shock. All in all, combined with the firm income growth and rising asset prices, this means that debt-servicing ability in the household sector is currently good. This has also been confirmed by the stress tests conducted by FI for new mortgagors. However, there is a lack of microdata on how assets, savings and debts are distributed among households, which makes it more difficult to obtain a full picture of the resilience of individual households and how this has been affected during the pandemic. There are indications that many highly indebted households in Sweden may have limited liquid assets.[71]

The higher indebtedness means that households have become increasingly sensitive to cyclical fluctuations and shocks to their personal finances. In addition, just under half of the total mortgage stock is tied to a variable interest rate that is renegotiated every third month. This means, for example, that changed interest rates have a relatively rapid impact on households' interest expenses and thus on their scope for consumption.

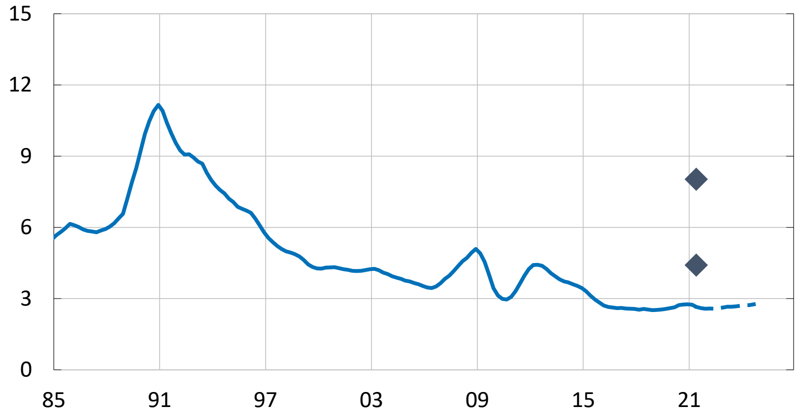
In a scenario in which the interest rate faced by households rises by 1 percentage point from current levels, interest expenses would remain on a relatively low level. But if the interest rate were to rise by 3 percentage points, meaning a rate in parity with levels prevailing in 2007-2008, the interest to income ratio for the entire household sector would be more than doubled (see Chart 15). For highly indebted households, the effect would be even greater. For a household with a debt-to-income ratio of 450 per cent, a rate rise of 3 percentage points would mean interest expenses three times as large as under the current level of interest rates. This corresponds to an increase of the interest-to-income ratio from 6 per cent to about 20 per cent. For a fictitious household that currently has a loan of SEK 2 million, with an interest rate of about 1.5 per cent, interest expenses would increase from SEK 2,500 to SEK 7,500 per month. Consumption can thus decrease relatively substantially if interest rates rise.[72] In addition, housing cooperatives also have a certain percentage of loans at variable interest rates, which means that households who own tenant-owned housing can be even more affected by rising interest rates. The Riksbank deems that the interest-rate sensitivity arising from highly-indebted households also having short interest-rate fixation periods constitutes a vulnerability for the Swedish economy.

[71] See M.K. Andersson and R. Vestman, "Liquid assets of Swedish households", *FI Analysis 28*, January 2021, Finansinspektionen.

[72] Household consumption may also be affected if housing prices fall, as this may affect their wealth. They may then feel poorer and thus consume less. They may also choose to increase their savings as a precaution as falling housing prices increase their loan-to-value ratio.

Chart 15. The household sector's interest-to-income ratio at different interest rate levels

Per cent



Note: The blue line shows interest expenditure as a percentage of disposable income. The broken line represents the Riksbank's forecast. Interest expenses have been adjusted for tax relief. The rhombuses illustrate the level of the interest-to-income ratio that has been calculated on the basis of the current debt-to-income ratio in a scenario in which the interest rate has risen by 1 and 3 percentage points respectively from the current level. The lowest rhombus represents an interest rate increase of 1 percentage point.

Sources: Statistics Sweden and the Riksbank.

The share of households choosing to fix all or part of their mortgage has increased in recent years.[73] One reason for more people fixing their interest rates may be because the interest rates for loans with somewhat longer fixation periods have recently fallen and, in some cases, are now lower than a variable interest rate. However, most new mortgagors only fix their interest rate for 1 to 3 years, which means that the average interest-rate fixation period is still short from an international perspective.[74]

Consumption loans are forming a larger part of household finances and may increase their vulnerability

Consumption loans to households, defined as loans without underlying collateral (such as unsecured loans) and loans with collateral other than housing (such as a loan to finance a car or boat, for example), have been characterised by relatively high growth in recent years. By spring 2020, loans had grown by about 7 per cent at an annual rate.[75] The growth rate in loans temporarily slowed during the pandemic but has now started to grow more rapidly again, which may have to do with the relaxed restrictions and resumed consumption patterns.

Consumption loans currently make up about 20 per cent of total loans in the household sector. In addition, they usually have higher interest rates than mortgages, for example. These high interest rates mean that these loans make up just over one-third of households' total interest expenditure. The spread in individual interest rates is

[73] See Chart A.14 in the Chart Appendix.

[74] See Chart A.15 in the Chart Appendix and U. Holmberg et al. (2015), "An analysis of the interest-rate fixation period for Swedish mortgages", *Economic Commentaries no. 7*, 2015, Sveriges Riksbank.

[75] See Chart A.16 in the Chart Appendix.

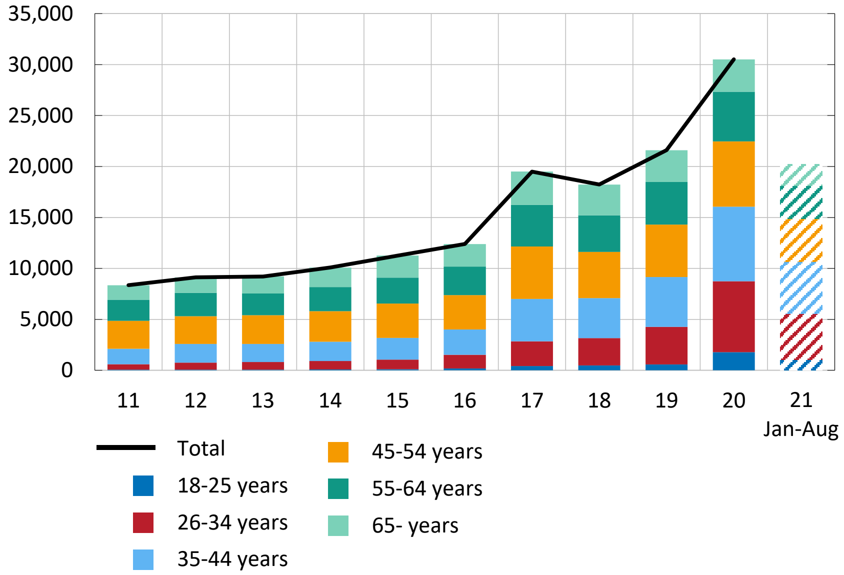
also substantial and can vary considerably depending, for example, on the size of the loan and among creditors. In addition, there is currently no system for the creditor to see all debts of the borrower when a new consumption loan is granted. This increases the risk that credit institutions underestimate the actual debt-servicing ability of the borrower and thus grant new loans that the borrower may not be able to afford to re-pay. This can be costly and lead to payment problems for borrowers. A system that shows all the borrower's debts could help to reduce the risk of payment problems by providing the creditor with a better basis for the credit assessment.

In parallel with the increased growth rate in consumption loans, the number of debt relief applications to the Swedish Enforcement Authority has also risen. The increase in application is greatest for the age groups 26-34 years and 35-44 years, which together make up about half of the applications. From January to August 2021, a total of 20,225 debt relief applications were received by the Enforcement Authority (see Chart 16). According to the Enforcement Authority, interest in debt relief has risen sharply, and the latest figures indicate an increase in the number of applications compared with the previous year. The rise in debt relief applications may depend on several factors. Firstly, it has become easier to apply for debt relief after the introduction of a new e-service and secondly, applications have increased due to the legislative amendment made in 2016.[76] According to the Enforcement Authority, unemployment is the most common reason for applying for debt relief. Illness, separation and high consumption are also factors that contribute to payment problems. Loans linked to consumption are the most common type of debt.[77]

[76] A new Debt Relief Act (2016:675) was introduced in 2016. The aim of the act was to give more people in debt the chance to apply and receive debt relief.

[77] The conclusions are based on data from applications received via the Enforcement Authority's e-service in 2020 and the first half of 2021. It is also worth noting that not all debts registered at the Enforcement Authority are loans from credit institutions. A large share of them are made up of unpaid tax liabilities and traffic-related debts.

Chart 16. Debt relief applications at the Swedish Enforcement Authority
Number



Note: Patterned bars refer to outcomes up to and including August 2021.

Source: Swedish Enforcement Authority.

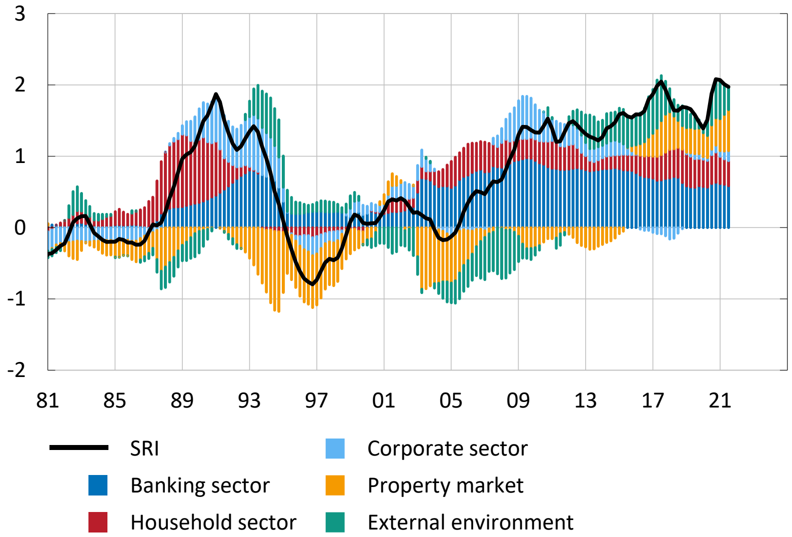
High household indebtedness is contributing to high systemic risks

The trend increase in housing prices and household debt has contributed to the Riksbank's indicator for measuring and illustrating financial risks and vulnerabilities rising over time (see Chart 17). Recently, the indicator has fallen slightly, among other reasons due to reduced uncertainty over the economic effects of the pandemic.[78] At the same time, it remains at a high level, which can largely be explained by developments in the housing and property market, high household indebtedness and the structure of the Swedish banking system, such as its size and concentration.

[78] For the indicator's construction and components, see D. Krygier and P. van Santen (2020), "A new indicator of risks and vulnerabilities in the Swedish financial system", *Staff memo*, Sveriges Riksbank.

Chart 17. Indicator of vulnerabilities and risks in the Swedish financial system

Standard deviation from mean



Note: A higher value means higher risks and vulnerabilities. For all series included, see D. Krygier and P. van Santen (2020), "A new indicator of risks and vulnerabilities in the Swedish financial system", *Staff memo*, Sveriges Riksbank.

Source: The Riksbank.

The high level of the systemic risk indicator indicates that the Swedish financial system is more vulnerable to shocks than previously and that the risk of sharp downturns in the economy in the future is greater. This can also be exemplified with the help of the Riksbank's *Growth-at Risk* indicator (GaR).[79] This indicator takes the level of the systemic risk indicator into account and estimates the probability of various outcomes of future economic growth with a focus on strongly negative outcomes. Based on the high value of the systemic risk indicator, the GaR indicator suggests that the risk of GDP growth being very low is greater than before. The higher probability of sharp falls in GDP is judged to pose a risk to financial stability.

[79] Growth-at-Risk is a method used by, among others, the ESRB, the IMF and other central banks to quantify systemic risks. Downside risks and tail risks are also commonly used terms used to describe unlikely but not impossible events. In statistics, these are often referred to as *extreme outcomes* and are defined as the worst five per cent of the outcomes that have happened for GDP growth historically. These include the economic downturns during the 1990s crisis, the financial crisis and the coronavirus pandemic. Statistically, these types of extreme outcomes occur once every twenty years on average. The outcome right at the limit of inclusion in the worst five per cent of outcomes is interpreted as a risk indicator called *Growth-at-Risk* (GaR). See D. Krygier and T. Vasi, "Macrofinancial conditions, financial stability and economic growth in Sweden – evaluating the Growth-at-Risk framework", *Staff memo,* September 2021, Sveriges Riksbank.

2.4 Good profitability in the banking sector but risks remain

Throughout the pandemic, measures implemented by authorities have helped to maintain a good funding situation for the major banks in Sweden. Moreover, the banks still have good access to capital, largely thanks to the stricter requirements introduced following the global financial crisis 2008-2009, but also because they have had good results and limited loan losses. A credit crunch has therefore been avoided. However, the banks must consider the potential consequences when various support measures are phased out and the world economy normalises after the pandemic. In addition, there are risks remaining in the banks' loan portfolios, for example due to their exposures to the property market.

The banking system is large, concentrated and interconnected

The Swedish banking system is large and concentrated. Including foreign banks' operations in Sweden, the banking system's total assets amount to around 300 per cent of Sweden's GDP.[80] Moreover, the major banks in Sweden are tightly interconnected, for instance in that they are big owners of one another's covered bonds and have similar exposures to certain industries.[81] In addition, there are strong links to other financial market agents both in Sweden and abroad, such as those who invest in securities issued by the banks. The structure of the banking system, therefore means that problems in one bank can quickly spread to other banks and markets, and thereby negatively affect confidence in the entire financial system. Such problems may, for instance, derive from the banks' earnings and funding capacity, as well as incidents connected to money laundering or cyber attacks.

The banks' results have improved and loan losses are low

Compared with the European banking sector as a whole, the major banks in Sweden have had good cost efficiency for a long time, good profitability and low loan losses. As a consequence of the severely deteriorated outlook and the uncertainty at the beginning of the pandemic, however, the banks increased their loan loss provisions, which had a negative effect on their results. As macro prospects have now improved, and thanks to extensive support measures, loan losses have been kept low and loan loss provisions have declined to their pre-pandemic levels. The latter illustrates that banks no longer consider the risks of loan losses to be as high as they feared at the beginning of the pandemic. This has also led to improved return on equity (see Chart 18).

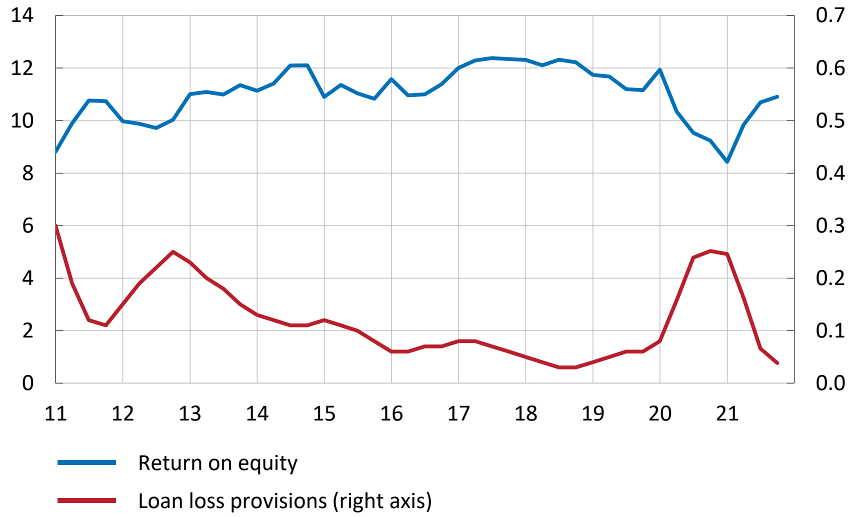
[80] Swedish banking groups and foreign banks' operations in Sweden are included, March 2021. Source: ECB.

[81] The "major banks in Sweden" are Danske Bank, Handelsbanken, Nordea, SEB and Swedbank. The "major Swedish banks" are Handelsbanken, SEB and Swedbank.

The share of non-performing loans (NPLs) is also still lower for the major banks in Sweden than for many other banks in Europe.[82] In addition, their P/B ratios have increased as equity prices and the market's valuation of equity capital have recovered since the decline at the start of the pandemic, and are currently higher than for their European peers.[83]

Chart 18. Return on equity and loan loss provisions

Per cent



Note: Rolling four quarters for the major banks in Sweden, simple average. Refers to return on equity on left axis (adjusted for one-off items) and loan loss provisions in relation to lending to the public on the right axis. According to IFRS 9, the reporting of expected loan losses is based on forecasts of future macroeconomic conditions, whereby assumptions and subjective assessments may affect the reserved amount.

Sources: S&P Global Market Intelligence and the Riksbank.

Risks remain in the banks' loan portfolios

Despite the direct uncertainties linked to the pandemic now having declined, the banks are still exposed to other risks that have been present in the Swedish banking sector for a long time. For instance, they have substantial exposures to the property market - exposures that have increased in recent years and also during the pandemic. For example, the volume of mortgages has increased (see Chart 19). The banks are also to a large degree exposed to commercial property companies and around 50 per cent of their lending to Swedish non-financial corporations is to this sector.[84] So far, property companies have fared relatively well during the pandemic. However, there are other risks that have increased, such as those linked to the funding structure of property companies (see the section "Recovery in the Swedish corporate sector, but

[82] See *Risk Dashboard*, Q2 2021, EBA. Read more about non-performing loans in the article "Non-performing loans in the euro area and financial stability", *Financial Stability Report,* 2021:1, Sveriges Riksbank.

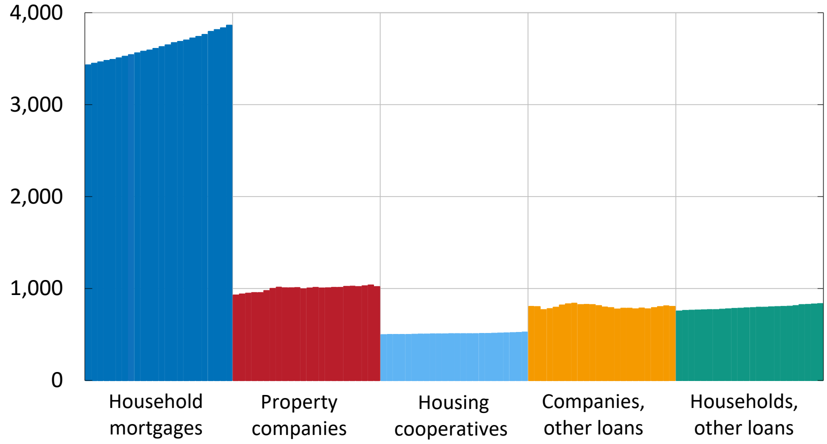
[83] P/B stands for Price-to-book and is a key ratio that refers to stock market value in relation to book value of the banks' equity. See also Chart A.21 in the Chart Appendix.

[84] Refers to loans from MFIs in all currencies, September 2021. Source: Statistics Sweden.

the consequences of the pandemic may take time to manage"). Given banks' large exposures to the sector, it is positive that they now need to have more capital in relation to their property exposures as a result of the additional capital requirement introduced by FI at the end of 2020.[85] This gives them greater resilience to loan losses if these property companies were to suffer from major shocks in the property market.

Chart 19. Loans with collateral in the property sector and other loans

SEK billion



Note: Refers to outstanding loans during the period September 2019 – September 2021 for MFIs in all currencies.

Sources: Statistics Sweden and the Riksbank.

In addition, there are climate risks in the banks' loan portfolios. This concerns, for instance, lending to companies in industries that either affect, or are affected by, the climate. In December 2020, approximately 25 per cent of lending to non-financial corporations consisted of loans to companies in sectors emitting large or medium-sized volumes of carbon dioxide.[86] This share of the lending is thus directly exposed to transition risks, as the cost for companies in these sectors to adapt their businesses to reach the climate goals may be high. In addition, the banks' loan portfolios are exposed to physical risks, for example through loans against collateral that would risk losing value if climate risks materialise. For example, the value of real estate, which constitutes a large part of the banks' collateral volume, may be adversely affected if this is damaged by flooding. By both companies and banks improving their sustainability reporting, these risks can be better managed (see the section "Inadequate data reporting is hampering the climate transition in the financial sector").

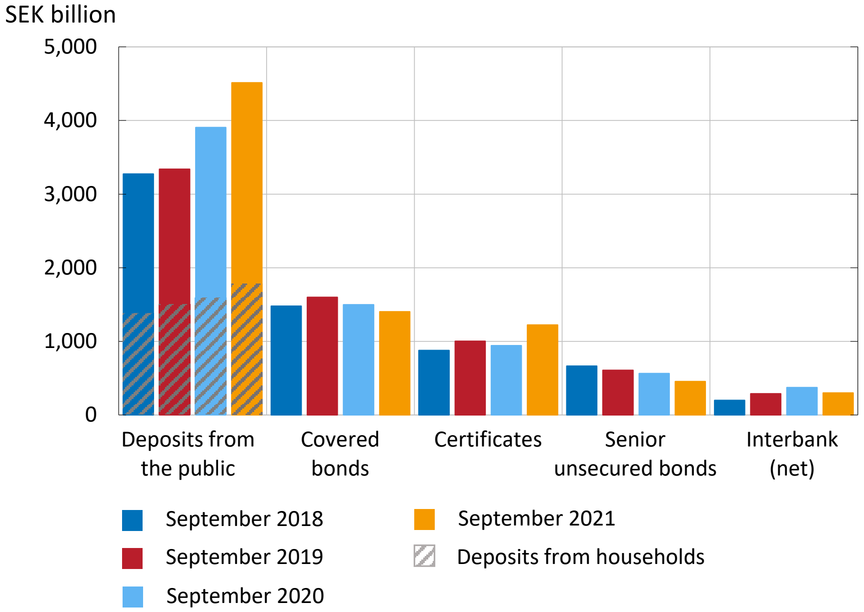
[85] See the memorandum *Increased capital requirements for bank loans for commercial real estate*, January 2020, Finansinspektionen.

[86] The property sector is excluded here. This is one of the lowest-emission sectors among companies with medium-sized CO_2 emissions. See C. Cella (2020), "Banking and climate-related risks, implications for financial stability in Sweden", *Staff Memo*, May, Sveriges Riksbank.

Deposits comprise a larger share of the banks' funding

The major banks in Sweden have for a long time funded about 50 per cent of their lending by issuing securities in the capital markets and the remainder through deposits from the public. A significant share of the market funding is in foreign currency, primarily US dollars. Banks are thus dependent on global financial markets functioning well. During the pandemic, deposits in the banks from the public have increased, at the same time as market funding has declined (see Chart 20). There are several reasons for the increased deposits. One reason is the Riksbank's asset purchases, which increase liquidity in the financial system.[87] Another reason is that households and companies have generally saved more in bank accounts during the crisis, partly to attain the security offered by savings and liquidity buffers.

Chart 20. The major Swedish banks' funding



Note: Aggregate for the major Swedish banks. The non-gray parts of bars referring to deposits from the public contain deposits from companies.

Source: Bank reports.

Generally, deposits, primarily from households, are considered to be a stable and cheap source of funding. However, deposits made during the pandemic can be assumed to be more temporary and the inflow may thus decline again when the economy normalises. This could, for instance, arise from a willingness among households and companies to return to more normal patterns of consumption and investment. Thus, the needs of individual banks for supplementary market funding may increase going forward, which they need to take into account in their funding plans.

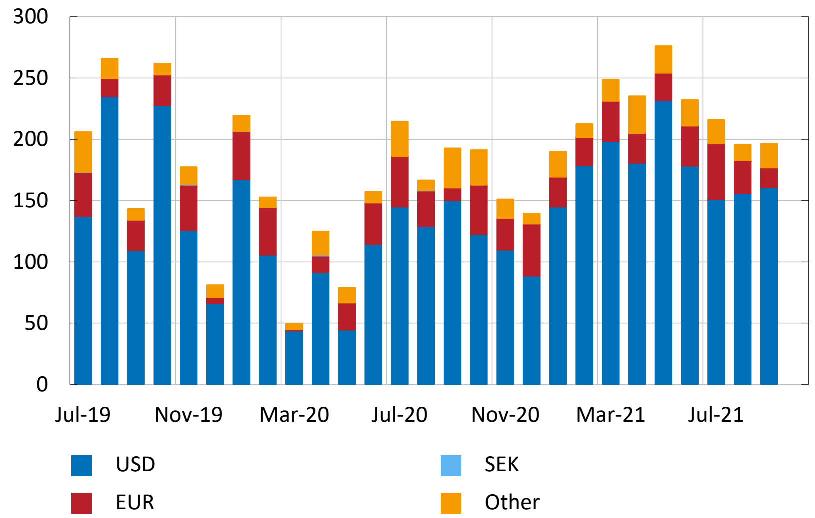
[87] Read more about how the Riksbank's measures can affect liquidity in the financial system in H. Armelius, C. Claussen and D. Vestin (2020), "Money and monetary policy in times of crisis", *Economic Commentaries* No. 4, Sveriges Riksbank.

Banks continue to issue securities despite dampened need

The increased deposits from the public may have currently reduced the banks' need to take in new market funding. This is illustrated by the major Swedish banks now issuing lower volumes of covered bonds, as part of their long-term funding, than in previous years (see Chart 20 and the article "The market for Swedish covered bonds during the coronavirus pandemic" in this report). However, during 2021, the major Swedish banks have increased their borrowing of short-term securities, known as certificates. These securities are almost exclusively issued in foreign currencies, primarily US dollars (see Chart 21). A large share of this borrowing is converted into Swedish kronor in the foreign exchange market, at a rate normally lower than STIBOR at the equivalent maturity, and then for example used for short-term lending in Sweden in Swedish kronor, or for funding liquid assets.

Chart 21. Issued certificates by currency

SEK billion



Note: The major Swedish banks' issued volumes of certificates (commercial papers (CP) and certificates of deposits (CD)) every month. Issued volumes in SEK are almost non-existent.

Source: The Riksbank.

In June 2021, the major Swedish banks had capital and outstanding issued bonds that exceeded the current MREL requirements by a good margin.[88] As the bonds mature, the banks must replace them with new ones. The Swedish National Debt Office's subordination requirements are being phased in and must be met by 2024. This means that the banks need to issue more subordinated bonds over the next few years.[89]

[88] See the report *Crisis preparedness of Swedish banks*, September 2021, Swedish National Debt Office.

[89] When an instrument is subordinated, it must come after the liabilities in the order of priority that the resolution authority is unable or unwilling to write down in resolution proceedings, such as deposits from private persons.

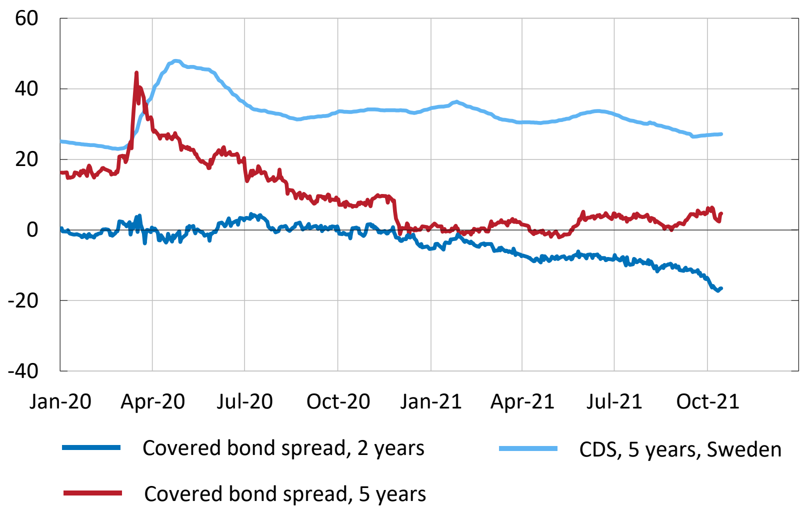
Banks' market funding costs continue to be low

In addition, over the year, market rates for both short and long-term funding have been low and stable, at the same time as government measures have contributed to liquidity in the market (see Chart 22). One important purpose of the measures has been to prevent the banks' funding costs from rising as a result of increased market turbulence. As the market situation has improved and stabilised, the need and demand for the Riksbank's lending facilities have been low for some time now. In September 2021, the Riksbank therefore announced that several measures would be terminated.

Long-term interest rates in several other countries rose at the end of summer and beginning of autumn 2021.[90] Swedish government bond rates have also risen during the autumn, which has also affected the rates on bonds issued by the banks. However, the upturn is still relatively limited and the Swedish rates are still very low, seen from a historical perspective. If the major banks' funding costs in the capital markets continue to increase, it is likely that households and companies will face a higher lending rate. This may entail a risk for those who have increased their indebtedness and are therefore particularly vulnerable in such a situation.[91]

Chart 22. Premiums for banks' funding

Basis points



Note: Refers to interest rates for Swedish covered bonds expressed as spread over corresponding swap rate. The CDS premium refers to a one-month rolling average of the costs incurred by the Swedish major banks for unsecured borrowing on the bond market, simple average. See also Chart A.23 in the Chart Appendix with regard to selected reference rates.

Sources: Markit and the Riksbank.

[90] See Chart A.9 in the Chart Appendix.

[91] See R. Eidestedt, D. Forsman and E. Ünlü (2020), "The funding of the major Swedish banks and its effect on household mortgage rates", *Economic Commentaries* no. 8, Sveriges Riksbank.

The banks' liquidity situation is currently good, but risks remain

Stricter banking regulations have increased transparency regarding the banks' risks, and made the banks better prepared to manage stressed situations. Examples of such stricter requirements include the banks being required to hold larger liquidity buffers (LCR) and have more stable funding (NSFR). These measures illustrate the banks' capacity to cover their stressed net outflows for 30 days respectively to hold a certain level of stable funding in relation to their illiquid assets. During the pandemic, the levels for the major banks in Sweden have continued to be above the formal requirements. In June 2021, new requirements were introduced via the so-called banking package for the level and reporting of NSFR.[92]

As a complement to the liquidity measures LCR and NSFR, the Riksbank regularly conducts stress tests to assess the major banks' resilience to liquidity shocks under other scenarios and time intervals. The stress tests are not forecasts, but reflect hypothetical, yet possible, scenarios and are based on different assumptions regarding the banks' situation.[93] In the Riksbank's system-wide scenario, the entire banking system is assumed to be suffering financial stress. The banks lose access to market funding in this scenario, the haircuts on their liquid assets become significantly higher and they have some outflow from deposits from the general public. The banks are assumed to renew their currency swaps and thus continue to mediate foreign currency to counterparties in the Swedish financial system.

Further, it is assumed that the banks cannot use the whole of their liquidity reserve to cover their outflows. The results of the stress test should be interpreted as the liquidity need that the banks are assumed to have after having used so much of their liquidity reserve to cover their outflows that the market no longer has confidence in their liquidity situation. In the stress test, this liquidity need arises when the banks' LCR falls below 75 per cent.

In the Riksbank's system-wide scenario, the major Swedish banks manage to cover their cash outflows for up to a month. It would therefore appear that the LCR requirement increases the banks' resilience during this time interval. However, after two months, a need for the equivalent of SEK 100 billion has arisen (see Chart 23). This need then gradually increases up to SEK 500 billion after six months, which corresponds to just over 5 per cent of the total assets of the major banks.[94] Just over half of these SEK 500 billion are US dollars. The results thus supplement the LCR and NSFR as

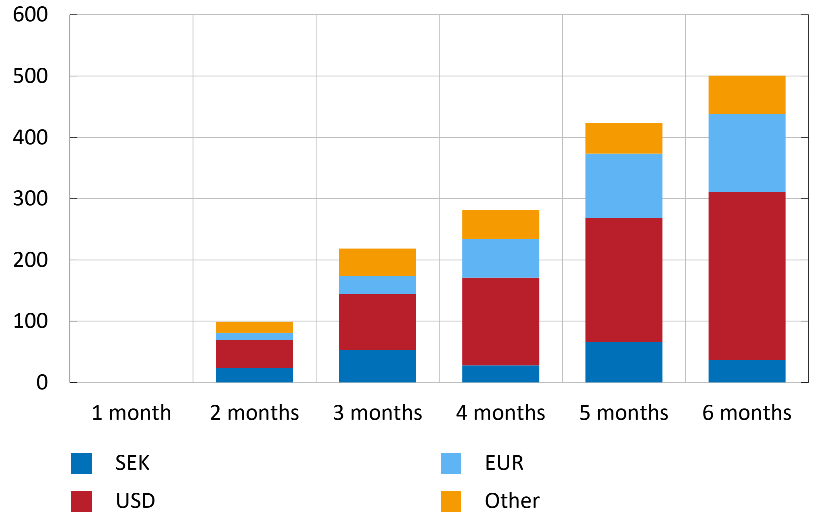
[92] See the Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 and the fact box "EU implements parts of the Basel III agreement through the banking package" in *Financial Stability Report*, 2021:1, Sveriges Riksbank. The new requirement means that the banks must fulfil at least 100 per cent of the NSFR at a total level. The banks must also report NSFR quarterly, both at total level and in all significant currencies.

[93] For more information on the method, see the article "Bank liquidity stress testing" in *Financial Stability Report*, 2019:2, Sveriges Riksbank, and M. Danielsson and J. Manfredini (2019), "The Riksbank's method for stress testing banks' liquidity, *Staff Memo*, November, Sveriges Riksbank.

[94] Banks' total assets refer to the average sum of their assets between the third quarter of 2020 and the second quarter of 2021.

they give an indication of how large the liquidity need might be within six months under a stressed scenario, despite the LCR and NSFR requirements being met at the start of the scenario.

Chart 23. The Riksbank's stress tests of the banks' liquidity needs
SEK billion



Note: The liquidity need refers to the major Swedish banks and is shown cumulative over the period of the stress test. The stress test is based on the banks' reported data to the Riksbank and refers to July 2020-June 2021. The category "Other" includes for example DKK, NOK and GBP.

Source: The Riksbank.

The banks' capital ratios are still above the authorities' requirements

As part of the banking package, a binding leverage ratio requirement was also introduced, which implies that a bank's Tier 1 capital, in relation to its total assets and off-balance-sheet commitments, must amount to at least 3 per cent.[95,96] The major banks' leverage ratios have remained relatively constant over time and the leverage ratio requirement is an important complement to the risk-weighted capital requirement (see Chart 24). The CET 1 ratio has increased, as the major banks' capital has grown more than the risk-weighted assets. Among other things, this can be explained by increased capital levels, which are partly the result of the recommendation of FI and other supervisory authorities on limited dividend payments and share buybacks, and the fact that the banks' balance sheets have grown with a larger proportion of

[95] See, for example, the memorandum *New capital requirements for Swedish banks*, November 2020, Finansinspektionen.

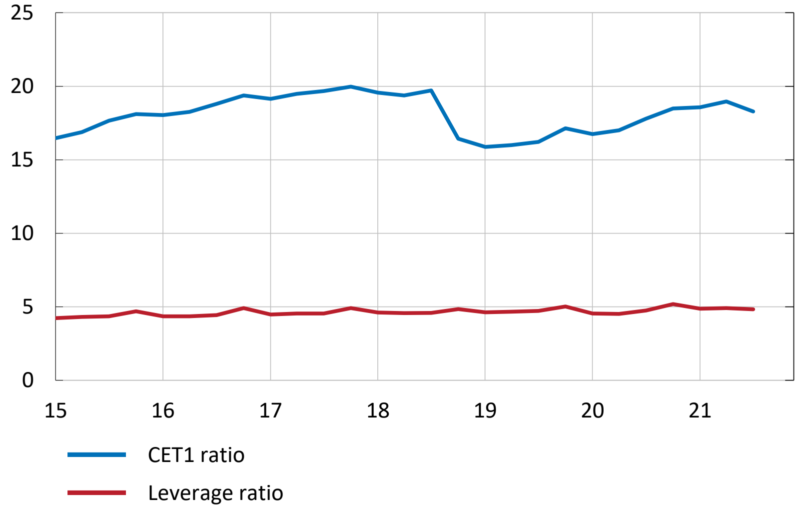
[96] FI can tighten the leverage ratio requirement through a so-called Pillar 2 guidance, and deems that this increase will probably amount to about 0.2-0.5 per cent of their leverage ratio exposure amount. The scale of the mark-up is based on stress tests and qualitative factors such as underlying risks in the bank's business model. A corresponding Pillar 2 guidance is also available for the risk-based capital requirement. See the memorandum *Övergripande ansats för att bedöma pelare 2-väglendingen för svenska banker [Overall approach for assessing Pillar 2 guidance for Swedish banks,* May 2021, Finansinspektionen.

central bank reserves and mortgage loans, which have low risk weights in the banks' calculations of risk-weighted assets.

As the substantial uncertainty at the outbreak of the pandemic has now declined, and the loan losses have been low, FI and other authorities announced during autumn 2021 that they would not be extending their recommendations after September. The fall in the CET1 ratio during the third quarter of 2021 can thus partly be explained by the fact that, over the autumn, several banks have carried out or decided on extra dividends or share buybacks (see Chart 24).

Chart 24. CET 1 ratio and leverage ratio for the major banks in Sweden

Per cent



Note: Refers to a volume-weighted average. The large reduction in the CET 1 ratio in 2018 is due to the risk-weight floor for Swedish mortgages being moved from Pillar 2 to Pillar 1. See "Risk-weight floor for Swedish mortgages to become a Pillar 1 requirement", fact box in *Financial Stability Report* 2018:2, Sveriges Riksbank. FI's requirement of CET 1 ratios for the major Swedish banks was at the end of June 2021 within the interval of 12.3 and 13.0 per cent.

Sources: Bank reports and the Riksbank.

As a result of the limited dividend payments, in accordance with the authorities' recommendations, and the reduction by FI of the countercyclical capital buffer from 2.5 to 0 per cent, the banks' management buffers above the capital requirement increased during the pandemic.[97] So far, the major banks in Sweden have not needed to use their buffers but have still been able to maintain the credit supply. The challenge when developing bank regulations and recommendations is to ensure that banks have substantial buffers, but that they also have an opportunity to use these in a crisis. If the banks have a good capital level to begin with, it increases the probability that they will be able to use the buffers.

[97] The management buffer is the excess capital that a bank has in addition to what is needed in order to meet the formal requirements. The major Swedish banks have explicit internal financial targets for the size of the management buffer. The target can be expressed as a specific percentage or as a target interval, normally between 1 and 3 percentage points above the requirement.

In September, FI decided to raise the countercyclical buffer rate to 1 per cent.[98] FI has also notified that they are aiming to gradually raise the buffer rate to 2 per cent in 2022, but that this will depend on economic developments. The Riksbank's assessment is that the major banks currently have good margins to manage a positive countercyclical buffer rate being reintroduced, at the same time as they can continue to provide households and companies with credit. A higher countercyclical capital buffer value should therefore not lead to a credit crunch. Although the banks' capital surplus over the regulatory requirements might tempt them to distribute large dividend payments, banks need buffers to be able to deal with unforeseen events and they also need to take into account that the requirements regarding their capital can increase going forward.

Future banking regulation set to further strengthen the resilience of banks

On 27 October, the European Commission presented a proposal for new rules for banks.[99] The proposal is known as the 'banking package 2021' and consists of three main elements: i) the implementation of the final parts of Basel III; ii) the requirement for banks to identify, disclose and manage sustainability risks; and iii) stronger tools for banking supervision. The Commission also proposes some changes to the rules for the resolution of banks. Some examples of what is included in the proposal are revisions to the framework for credit risk, market risk and operational risk. This includes changes to both standardised approaches and internal models. The new so-called output floor is also included in the proposal. Several of the new rules are proposed to enter into force in 2025, but everything will not be fully implemented until 2032-2033. Before that, the proposal will be discussed by the EU Parliament and the Council, a process that usually takes about one to two years, whereby the new rules will then be implemented in Swedish legislation.

Increased competition in the banking sector

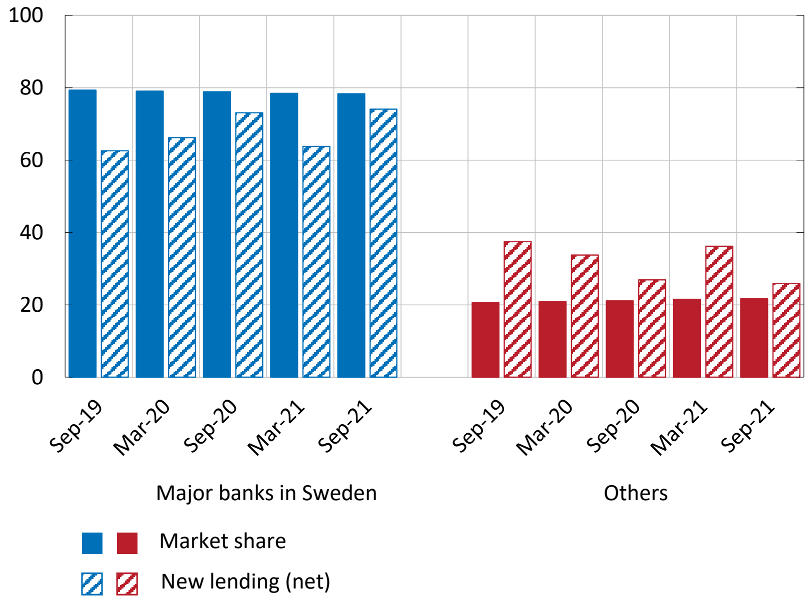
The structural changes observed in the banking sector, such as digitalisation and the continued technological developments, have contributed to increased competition. For instance, small and medium-sized banks in Sweden have increased their market shares vis-a-vis the major banks in the mortgage market – a development that has continued during the pandemic. They have succeeded in this partly by offering simple application processes for mortgages via newly developed platforms. The major banks' share of new mortgage lending (net) has for some time been lower than their overall market share for mortgages (see Chart 25). Conversely, the smaller players are taking market shares, as they have a larger share of the new loans (net). Increased competition is in general beneficial for consumers, as they are offered new products and lower prices. When the number of players in the banking market increases, this may also lead to lower concentration risks.

[98] The period of implementation is twelve months, and thus the buffer rate of 1 per cent will apply on 29 September 2022. See press release from FI, September 2021. Finansinspektionen raises the countercyclical buffer rate to 1 per cent.

[99] See European Commission press release, October 2021. Banking Package 2021: (europa.eu)

Chart 25. Lending to households with homes as collateral

Per cent



Note: Refers to lending in Sweden in all currencies. The ‘Others’ category refers to a sample of 18 Swedish banking companies, credit market companies and savings banks. ‘New lending (net)’ refers to the proportion of the difference in outstanding volume of lending to households with homes as collateral at the end of each period.

Sources: Statistics Sweden and the Riksbank.

2.5 Vulnerabilities and risks among other financial agents

Here, other financial agents are agents who conduct operations similar to banking, without actually being banks, for instance, fund managers and insurance companies. They can, in particular, affect financial stability through their actions in financial markets, as they manage large assets. In addition, they can pass on stress to other agents via interconnections. This section also includes participants whose operations are based on financial technology (FinTech companies). These agents are not at present assessed to comprise any risk to financial stability.

Small inflows to corporate bonds since last summer

Investment funds that invest in less liquid assets, such as corporate bonds, and at the same time offer unit-holders the potential for frequent redemptions at short notice may find a discrepancy between liquidity on the asset side and on the liability side. This so-called liquidity transformation makes the funds vulnerable to large redemptions by unit holders, since the funds may then have to sell assets to meet the redemptions. By extension, this type of liquidity risk may also affect other players dependent on the underlying market, in particular non-financial companies. In a stressed market situation, it can quickly become expensive or difficult for companies to refinance bonds that mature. In this type of situation, other investors in the corporate bond market can also be negatively affected in the form of losses (mark-to-market or realised) if the funds are forced to sell larger volumes of bonds and in this way affect the price outlook in the market.

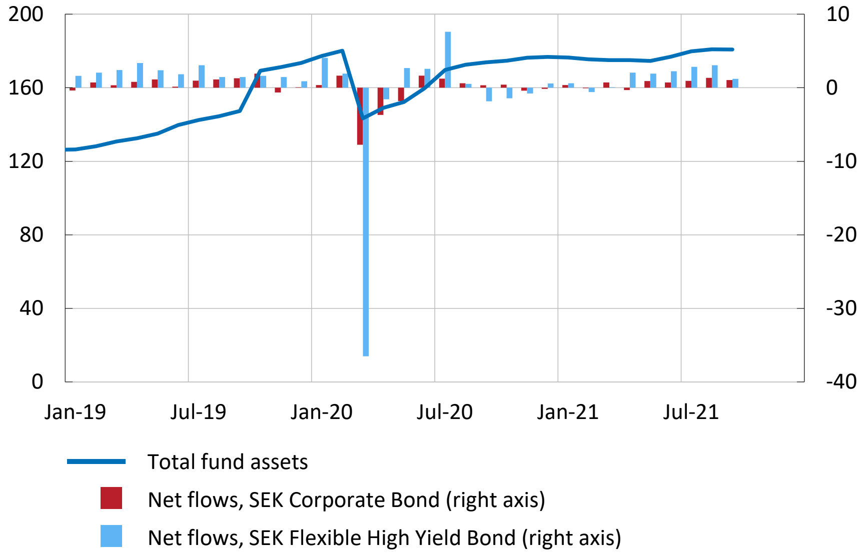
In March 2020, Swedish corporate bond funds experienced large net outflows when many unit-holders wanted to redeem at the same time.[100] Since then, the flows have stabilised. Last spring, the outflows were marginal, but since last summer there have instead been small inflows (see Chart 26). All in all, this has meant that fund assets for corporate bond funds have in principle remained unchanged so far this year.[101] The funds therefore comprise a large share of investors in the Swedish corporate bond market (see Chart 27).

[100] Corporate bond funds in many countries and regions experienced large outflows in March 2020. See *EU Non-bank Financial Intermediation Risk Monitor 2020* (”NBFI Monitor”), No 5, October 2020, ESRB.

[101] Other types of funds than just corporate bond funds may also invest in corporate bonds, such as certain mixed funds and short-term interest-rate funds.

Chart 26. Fund assets and net flows for Swedish corporate bond funds

SEK billion, percentage of fund assets

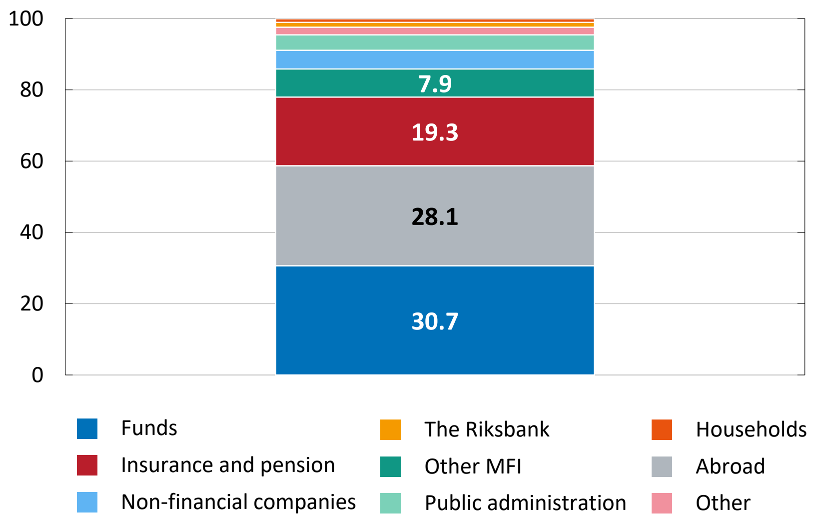


Note: Net flows are the difference between deposits and redemptions from funds.

Sources: Morningstar and Macrobond.

Chart 27. Holders of corporate bonds issued by Swedish companies in SEK

Per cent



Note: Percentage of total outstanding volume at end of 2021 Q2. Please note that the category “Abroad” can also include a large share of (foreign-registered) funds.

Sources: The Riksbank and Statistics Sweden.

FACTS – Measures to reduce the liquidity risks for the funds

Reducing liquidity risks for funds that invest in less liquid assets can take one of two main paths; either one increases the liquidity on the asset side (that is, in the holdings), or one reduces the liquidity on the liabilities side (that is, does not allow shareholders to make redemptions frequently or at short notice). Liquidity risks for different types of fund are an issue that is being worked on both internationally, for example in the Financial Stability Board (FSB) and the European Systemic Risk Board (ESRB), and nationally.

On a national level, FI has given fund managers the task of making a thorough liquidity analysis during autumn 2021 and implementing measures if the liquidity of the fund assets does not correspond to the redemption terms. FI says that it may be necessary to change the investment strategy so that the assets are more liquid, or to change the redemption terms for the fund.[102]

Swedish fund managers have relatively few liquidity management tools accessible in relation to many other countries in Europe. FI has therefore also investigated different types of liquidity management tool on behalf of the Government. These are anti-dilution levies, redemption gates with limits and two types of swing pricing that take into account transaction costs from net flows in the fund by adjusting the fund share value or the selling and redemption price.[103] FI proposes that these tools should be introduced and regulated by law and in regulations. FI has also proposed that fund managers shall use notice of termination periods and that the funds could be open for trading less often than is currently allowed in Swedish fund legislation.[104] FI's proposal has now been handed over to the Government for further processing. However, one form of swing pricing (adjusted sales and redemption prices), as well as anti-dilution levels are already deemed to be allowed by law and are therefore available to the funds to begin using after application to FI for a change in the fund regulations.

Large equity holdings a risk for insurance and pension companies

The size of the insurance companies and their links to banks in particular mean that shocks affecting insurance companies can spread further in the financial system. The insurance companies' investment strategies can therefore affect the risk of shocks arising. In today's situation with low interest rates, insurance companies are continuing their search for yield in their portfolios. Yield levels are primarily important for life insurance companies with guaranteed commitments. Obtaining a higher yield often requires making riskier investments. The share of equity has continued to increase

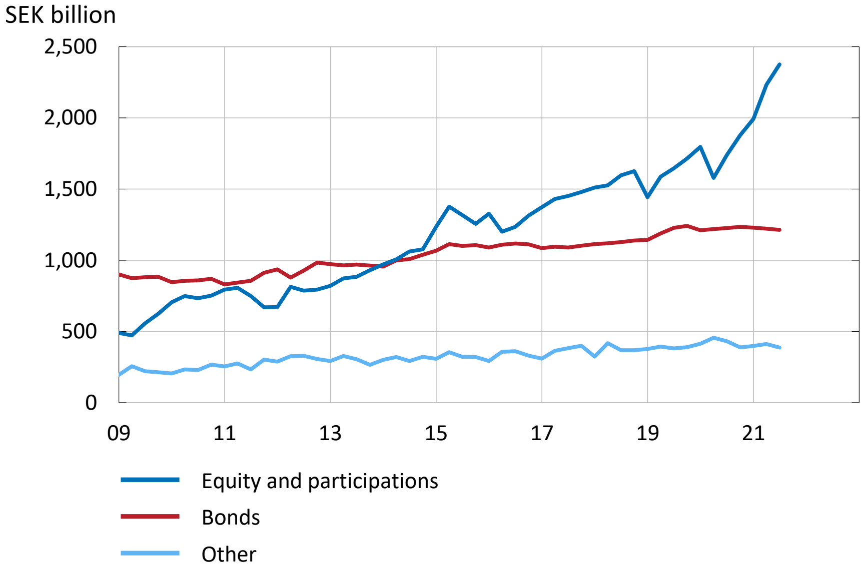
[102] See *Likviditetsriskhantering i fonder [Liquidity risk management in funds]*, *FI-tillsyn*, No. 22, June 2021, Finansinspektionen.

[103] These liquidity management tools are explained in more detail in the glossary at the end of the report.

[104] See *Likviditetsverktyg i värdepappersfonder och specialfonder [Liquidity management tools in securities funds and special funds]*. Reg.no. 21-3338, June 2021, Finansinspektionen.

(see Chart 28) and is also high from a European perspective.[105] The large share of equity makes the insurance companies sensitive to future developments in the stock market.[106] For instance, the solvency situation for insurance companies and occupational pension companies worsened significantly as a result of the stock market fall in March 2020, but as the stock market recovered, the solvency situation was restored to around the same levels as prior to the pandemic.[107]

Chart 28. Life insurance companies' investment assets



Note: Unit-linked insurance policies where the policyholder bears the risk are excluded. Equity and participations refers to quoted and not quoted equity, investment funds, options and other ownership shares. Other refers to, for instance, cash and bank balances, money market instruments, loans, buildings and land.

Source: Statistics Sweden.

High credit rating for bond holdings – limited risk of downgrades

The ESRB has previously studied risks that can be linked to large downgrades of corporate bonds' credit ratings at European level.[108] If the credit ratings fall from investment grade to high yield, often referred to as "fallen angels", many bond holders may be forced to sell their bonds because of their investment guidelines.[109] Sales like this can also indirectly affect other bond-holders by prices being adjusted. The more bonds with credit ratings in the lower region of investment grade, the greater the

[105] See *Financial Stability Report July 2021*, EIOPA for an analysis of the allocation of European insurance companies' investments.

[106] If equity prices fall, the initial margin requirements on existing derivative positions can increase, at the same time as new derivative contracts are entered into to adjust the composition of the asset portfolio. This creates a need for liquidity. If prices continue to fall, the need to add initial margins and enter into new derivative contracts will increase. In this way, the demand for liquidity will increase in a falling stock market. In March 2020, this contributed to an increased demand for US dollars.

[107] See *Stability in the financial system 2020:2*, November 2020, Finansinspektionen.

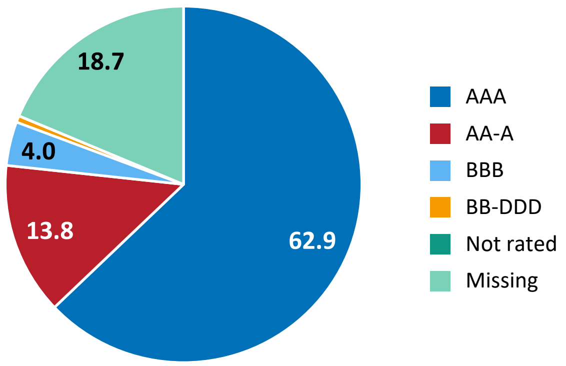
[108] See *A system-wide scenario analysis of large-scale corporate bond downgrades*, July 2020, ESRB.

[109] Investment Grade is a credit rating from AAA/Aaa to BBB-/Baa3. High Yield is BB+/Ba1 and below.

probability of large downgrades to high yield in the event of economic shocks. In the ESRB's analysis and in the EIOPA's Financial Stability Report, it is clear that European insurance companies on average have bonds with lower credit ratings and thereby a greater risk of downgrade than Swedish insurance companies have.[110] Swedish insurance companies' bonds still have a high credit rating (see Chart 29).

Chart 29. Insurance companies' bond holdings

Per cent



Note: Shares of total market value per 30 June 2021. Refers to both insurance companies and AP funds.

Sources: Dealogic, Fitch, Statistics Sweden and the Riksbank.

New players build businesses based on financial technology

FinTech is a designation given to an area where financial services are combined with new technological innovations.[111] Activities in FinTech can be entirely new types of services, for instance, innovations in payment mediation and cryptoasset services, or services similar to those already available in the market, such as bank-like activities.

Several different types of financial company exist in this field and their size varies. These can be already established players, such as banks, that use new financial technology. It can also be large technology companies, so-called BigTechs, which begin to offer financial services as a result of the large volumes of data they have on their customers. For natural reasons, FinTech is also an area where there are many new players (here referred to as FinTech companies), which on the whole are relatively small. Many companies in the FinTech area focus on cross-border operations. This is facilitated by the fact that many of the services are accessed via mobile phones or computers. For instance, there are many foreign FinTech companies that supply services to Swedish consumers or in Swedish kronor. Two examples are Revolut and Wise, which offer foreign exchange services and cross-currency payment services.

110 EIOPA Financial stability report July 2021.

111 For further information, see the article "FinTech – increasingly rapid interaction between financial operations and technological innovation" in *Financial Stability Report*, 2017:1, Sveriges Riksbank.

Like other companies that are active in the financial sector, FinTech companies must follow various regulations. Swedish FinTech companies shall in general also be supervised by FI.[112] The regulations that are applicable depend on the operations conducted and on the permits held by the company.[113] For example, payment institutions must comply with the payment services directive.[114] This can concern companies that enable consumers to make payments directly from a bank account when making an online purchase. There are also consumer credit institutions, which are covered by the act on certain consumer-credit operations.[115] They offer, for instance, services that entail taking over a customer's existing loans, instalments and private loans and then offering the customer a bundled loan at a lower cost. There are also financial institutions, which for instance can supply internet-based loan platforms. They only need to register their operations with FI, but are obliged to comply with the Act on currency exchange and other financial activities.[116] In some areas, such as for cryptoassets, there is still no regulation, or the regulations are not fully adapted to the activities offered by the FinTech companies.

FinTech companies pose some challenges

FinTech companies can promote innovation within the financial system and increase competitiveness by, for instance, offering services that make it cheaper and simpler to make payments. At the same time, the companies pose challenges for the authorities. As the area is relatively new, it may be difficult to determine which operations require permits and should be under supervision, and which do not. It is more difficult for the authorities to obtain information on operations that are not under supervision.[117] Thus, it will not be so easy to identify in good time the risks the operations may entail.

By taking advantage of new technologies and new consumer habits, among other things, FinTech companies can more easily operate in different markets than more traditional players. However, this could mean that they are quick to leave a specific market if problems arise there. This in turn could create problems for the market and its participants if they have links to these companies, for instance, that assets held by an agent quickly need to be liquidated.

Another aspect linked to FinTech companies and their activities is the companies' access to the central settlement systems in the financial system. In Sweden, this concerns the Riksbank's RIX system, where large-value payments in central bank money are settled. At present, it is in general more traditional financial players, such as

[112] Under certain laws, companies may, under certain conditions, apply for an exemption from authorisation and are not under supervision. Some companies only need to register their operations with FI and then are not under supervision. However, FI checks at least once a year that the companies registered meet the requirements imposed on them.

[113] Companies must also comply with a number of other laws, for example, related to tax law.

[114] See the Payment Services Act (2010:751).

[115] See the Certain Consumer Credit-related Operations Act (2014:275).

[116] See the Act (1996:1006) on currency exchange and other financial activities.

[117] The Riksbank only has a statutory right to collect information from agents that come under the supervision of FI. According to the proposal for a new Sveriges Riksbank Act, the Riksbank shall, among other things, oversee operations that are of particular significance for the financial infrastructure in Sweden. This could include certain FinTech companies.

banks, that are members of these settlement systems. As the FinTech area develops, newer players may also to a greater extent apply for access to settlement systems. This requires the authorities responsible for the systems, mainly central banks, to take a stance on which types of player shall be given access to the systems, and for what purposes.[118] It is also a matter of legislation, since within the EU it is, among other things, the so-called Finality Directive that regulates which players have access to the settlement systems.[119] The directive has been implemented in different ways in different EU countries and a revision of the directive is now under way to ensure that it is applied in the same way throughout the EU.[120]

[118] For instance, the Bank of England has since 2017 given non-bank payment service providers the possibility to apply for access to their settlement system. However, these actors must live up to a comprehensive risk management framework developed by various British financial authorities, including strengthened supervision. See the news item "Bank of England extends direct access to RTGS accounts to non-bank payment service providers", July 2017, Bank of England. Last updated 19 July 2017. Retrieved 19 October 2021. Bank of England extends direct access to RTGS accounts to non-bank payment service providers | Bank of England

[119] Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems.

[120] For more information, see *Payments Report*, 2021, Sveriges Riksbank.

2.6 The financial infrastructure is changing

The financial infrastructure systems have had high availability in 2021, and it has been possible to make payments and transactions with financial instruments throughout. A structural transformation is under way in the area of infrastructure, concerning, among other things, the harmonisation of various processes. In addition, it is not clear what the clearing landscape in Europe will look like going forward after Brexit. The fact that electricity prices have been more volatile than usual in the autumn has increased the risk exposures for the Swedish central counterparty (CCP) and its participants active in the electricity market. International work is also under way to analyse whether the margin requirements imposed on CCP participants reinforce market turbulence.

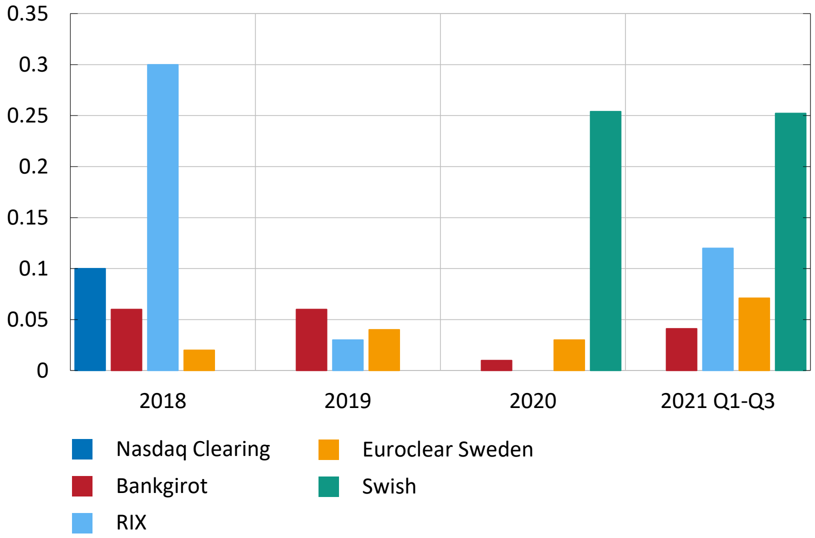
The financial infrastructure systems have had high availability

Avoiding operational interruptions and ensuring a high availability in the financial infrastructure systems are important so that companies and private individuals can make payments and trade with financial instruments. During the first three quarters of 2021, processing transactions in the Swedish financial infrastructure has worked relatively well (see Chart 30). Some interruptions have occurred, but to a small extent. The financial market infrastructures (FMIs) also have relatively good margins to the minimum levels of the capital requirements.[121] This indicates that they have the capacity to manage stressed situations in which financial losses may arise, and at the same time maintain operations and services.[122]

[121] Capital requirements for infrastructure companies are based on the international Principles for Financial Market Infrastructures (PFMI).

[122] See Chart A.28 in the Chart Appendix.

Chart 30. Interruptions to the Swedish infrastructure systems
Per cent



Note: 0 per cent shows that the system has been available the entire time without interruption. 0.2 per cent corresponds to an interruption of 5 hours over a period of one year. 0.2 per cent over a period of three quarters corresponds to about 3 hours and 45 minutes. Corresponding interruption times for Swish are about 17.5 hours and 12 hours respectively, as the service is available around the clock, every day of the year. Interruptions in Swish are calculated as the total interruption time for the Bankgirot platform Betalningar i Realtid, BankID and Getswish. Note that the chart shows interruption figures for Swish with effect only from 2020.

Sources: Bankgirot, BankID, Euroclear Sweden, Getswish, Nasdaq Clearing and the Riksbank.

The Riksbank is one of the driving forces behind the structural transformation

In several parts of the area of financial infrastructure, a structural transformation is under way that is affecting both the FMIs and their participants.[123] For example, this concerns the harmonisation and standardisation of processes in the area of payments and securities, both in Sweden and the rest of Europe. As the Swedish financial system is closely interlinked with foreign systems, it is important to have harmonised processes for the operations in the various markets to be efficient. Correctly managed, the structural transformation will result in the financial infrastructure as a whole functioning efficiently even in the future.

The participants in the Swedish securities market have started comprehensive work on harmonising the processes in the post-trade area to European standards.[124] This work is necessary to maintain the efficiency of the Swedish securities market. The securities market's work will be followed up and coordinated in a Swedish group called the National Stakeholder Group (NSG), which is chaired by the Riksbank.[125] By being a

[123] For further information, see E. Hellström, A. Börestam and H. Eklööf (2021), "Harmonisation and platform sharing in the financial market", *Riksbank Studies* No. 2, Sveriges Riksbank.

[124] The term 'post-trade' refers to activities taking place after order and trade of a security and includes the settlement of the securities transaction, among other things.

[125] NSGs are the norm for how European countries coordinate and follow up their national work on standards in the securities market's post-trade area. Each market has its own NSG.

link to the relevant forum in the Eurosystem, the group helps the Swedish securities market to be more involved in the European harmonisation work for securities. This makes it easier for the Swedish market to keep up with the rest of Europe in this area.

As part of this structural transformation, the Riksbank has investigated whether platform sharing with other central banks could be an alternative for keeping up with developments.[126] In September of this year, the Riksbank took a strategic decision according to which the aim is to be able to use the Eurosystem's technical platforms for large-value payments and for securities settlement, T2 and TARGET2-Securities (T2S), respectively.[127] By sharing platforms with other central banks in the future, it will be possible to ensure that the harmonisation of Sweden's financial infrastructure with Europe is maintained. Additionally, it makes it possible to benefit from economies of scale that hold down costs for development, operation and security, not least cybersecurity.[128] Some issues, including those linked to the design of contingency procedures, need more investigation, however.

Uncertainty over the development of the CCP landscape after Brexit

One important part of the infrastructure is the central counterparties (CCPs) and the possibility for clearing. A large proportion of the CCP clearing of interest derivatives in Swedish kronor takes place at LCH Ltd, a UK CCP.[129] As a result of Brexit, the legal conditions for UK CCPs have changed with regard to operating within the EU and offering their services to European agents. They are recognised by the European Securities and Markets Authority (ESMA) to do so. In the autumn of 2020, ESMA considered LCH to be systemically important for the EU and individual Member States, giving LCH a temporary recognition to operate in the EU.[130] The Riksbank shared ESMA's assessment of the clearing of interest rate derivatives in Swedish kronor, mainly because of LCH's dominance in the interest rate swap market. The interest rate swap market is significant for the Swedish financial system, as a large percentage of the bonds the banks use to finance themselves have fixed interest rates, while a large part of their lending is at a variable interest rate, for instance household mortgages. The fact that the different interest rate flows do not match one another exposes the banks to interest rate risk, which is usually handled by the banks entering into derivative contracts, usually in the form of interest rate swaps.

The present recognitions held by the LCH and other UK CCPs expire at the end of June 2022 and will therefore need to be reviewed. ESMA is therefore assessing whether UK

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[126] Platform-sharing with other central banks means that the Riksbank would enter into an agreement with the central bank(s) owning and running the platform. The Riksbank would thus outsource some tasks that would take place on the technical platform, but would continue to be responsible for the services to its participants.

[127] See the news item "The Riksbank wants to use the Eurosystem's T2 and TARGET2-Securities platforms", September 2021, Sveriges Riksbank. Last updated 23 September 2021. Retrieved 30 September 2021. The Riksbank wants to use the Eurosystem's T2 and TARGET2-Securities platforms | Sveriges Riksbank

[128] See speech by C. Skingsley (2021), 6 October 2021, Sveriges Riksbank, Skingsley: We need to update and modernise our payment services | Sveriges Riksbank.

[129] See Chart A.29 in the Chart Appendix.

[130] See the news item "ESMA to recognise three UK CCPs from 1 January 2021", September 2020, European Securities and markets Authority. Last updated 28 September 2020. Retrieved 27 October 2021. ESMA to recognise three UK CCPS from 1 January 2021 (europa.eu)

CCPs, or any of their clearing services, are of such substantial systemic importance for the EU or an individual Member State that it would not be appropriate, from a financial stability perspective, for the clearing to take place outside of the EU. This could result in the need for European agents participating in the CCP to move their clearing to CCPs within the EU or to CCPs outside the EU recognised by ESMA. A move of the clearing could, for example, affect the functioning of the interest-rate derivatives market.

The Riksbank is involved in the ongoing process at ESMA in its role as a central bank of issue for the Swedish krona and in the process of the European Systemic Risk Board (ESRB) in its role as member. The Riksbank's starting point in its own analysis of the issue is that it should be possible to maintain the function of the interest rate swap market in Swedish kronor, regardless of where in the world trade and clearing takes place. However, a prerequisite is that regulation and supervision are deemed to be satisfactory in comparison with European legislation. The Riksbank will communicate its views on this issue later in the year.

High volatility in the electricity market increases CCP participants' risk exposures

Many participants of the Swedish CCP, Nasdaq Clearing, are active in the commodities market and use the CCP to clear various commodity derivatives. CCPs are exposed to credit and liquidity risks as they take on the counterparty risks in the transactions they clear on behalf of their participants. During the autumn, electricity prices have been more volatile than normal, which increases the risk in some participants' portfolios, which in turn generates a higher risk for the CCP. To manage the increased risks to which the CCP is exposed, it has been necessary for the participants to post more collateral as there have been more intraday-margin calls (IDMC) than usual.[131] If the high volatility in the electricity market continues, the risks for the CCP will continue to increase. The participants need to have access to liquid assets that can be quickly posted as additional collateral to manage the increased risks, something that so far has not been a problem for them.

Ongoing work to analyse procyclicality in margin requirements

In conjunction with the increase in stress on financial markets in the spring of 2020, the risk exposure for CCP participants increased, and consequently also their margin requirements. As margin requirements increase, participants need to post more collateral. This may create liquidity stress for the participants if the demand for liquid assets, particularly cash, on the financial markets is higher than normal in total. Increased margin requirements therefore risk leading to procyclicality in the financial markets, i.e. further strengthening the market changes that are already taking place and in turn increasing the risk exposure of the CCP participants even more. Last spring

[131] Intraday-margin call (IDMC) is when a participant has to post extra collateral during the course of a trading day to cover its risk exposure. This happens when the risk in a participant's portfolio exceeds a predetermined level.

this situation arose in several parts of the world.[132] Therefore, work is being carried out in various international forums to further analyse the possible problems of procyclicality in margin requirements.[133]

[132] See, for example, *Holistic Review of the March Market Turmoil*, November 2020, Financial Stability Board.

[133] See, for example*, Review of marginal practices*, October 2021, Bank for International Settlements, Committee on payments and market infrastructures and the Board of the International Organization of Securities Commissions.

ARTICLE – The market for Swedish covered bonds during the coronavirus pandemic

This article examines how the market for covered bonds has developed during the pandemic and describes how the Riksbank's measures linked to the market have functioned. The Riksbank has purchased covered bonds and eased the requirements for the banks to use these as collateral for loans in the Riksbank. The purpose has been to alleviate the effects of the pandemic on the Swedish economy. The measures have helped keep the general level of interest rates low, at the same time as the Riksbank's presence as purchaser had a stabilising effect on the market in the initial phase of the pandemic. The Riksbank has begun to taper its purchases during 2021 and decided to revert to the previously applicable collateral requirements at the turn of the year.

During the pandemic, the investor structure in the market has changed. More flighty investors have sold off their holdings, including many foreign investors, in step with the Riksbank's purchases. Activity in the secondary market has also decreased slightly during the pandemic, to which the changed investor structure and the Riksbank's purchases may have contributed. However, the banks' funding opportunities via covered bonds remain good and they have issued covered bonds throughout the pandemic.

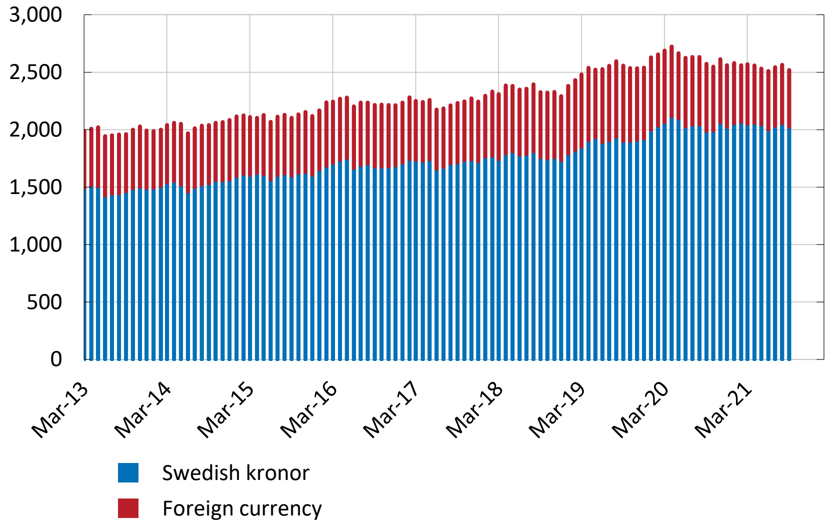
Even if the support measures are motivated, in the longer run they may lead to excessive risk-taking and the accumulation of vulnerabilities if financial actors expect to always receive help in a crisis. Similarly, companies and households need to consider that their interest expenses may rise going forward.

The market is important for financial stability and the monetary policy transmission mechanism

A bank can fund its lending to households and companies in various ways, with mortgages primarily being funded by the bank issuing covered bonds. The Swedish market for covered bonds is very large and has grown over time. The total outstanding volume currently amounts to around SEK 2,500 billion (see Chart 31).[134] This is more than twice the outstanding volume of government bonds and corresponds to approximately half of Sweden's annual GDP. Given the size of the market and its significance for the banks' funding, it is important for both financial stability and the monetary policy transmission mechanism that it functions satisfactorily.[135] Insurance companies and pension funds are major domestic investors in these bonds, as are funds and the banks themselves. Foreign investors also have a significant market share. In addition the Riksbank has become a significant participant during the pandemic.

Chart 31. Outstanding volume of Swedish covered bonds

SEK billion



Source: Statistics Sweden.

The Riksbank's measures linked to covered bonds

The restrictions that the authorities introduced during the pandemic to reduce the spread of infection had major consequences for the real economy and completely changed the economic prospects. Uncertainty with regard to how the real economy would cope with the crisis initially led to a substantial deterioration in the financial markets. Investors in general sought safer and more liquid assets. This increased the yield differentials between government bonds and riskier assets and there were signs of a deterioration in the functioning of the markets. This also applied to the market for covered bonds, where yields rose and liquidity deteriorated.[136] The turbulence

[134] Covered bonds are sometimes also called mortgage bonds. The holder of a covered bond has a special priority right in a so-called collateral volume, which consists primarily of mortgage loans, if the bank fails.

[135] For a more detailed review of covered bonds and their link to financial stability, see J. Fager Wettergren, D. Forsman, M. Sandström and J. Stenkula von Rosen, "The market for Swedish covered bonds and links to financial stability" *Economic Review* 2013:2, Sveriges Riksbank.

[136] See *Financial Stability Report 2020:1*, Sveriges Riksbank.

continued, which put credit supply in the Swedish economy under considerable pressure. There was a risk that this would aggravate the downturn in the economy and lead to prolonged negative consequences for output and employment.

The Riksbank's purchases of covered bonds

To mitigate the effects of the crisis, the Riksbank has implemented a number of measures. One of them has been to extend purchases of Swedish securities to cover more asset types than government bonds, including covered bonds.[137] The purpose of the purchases was to keep down the general level of interest rates and contribute to a functioning credit supply. The fact that the Riksbank also began to buy covered bonds was important for maintaining the pass-through of monetary policy. The purchases of other asset types have also given the Riksbank the capacity and operational preparedness to act quickly, and have made it possible to implement such purchases if this were to become necessary in future stressed situations.

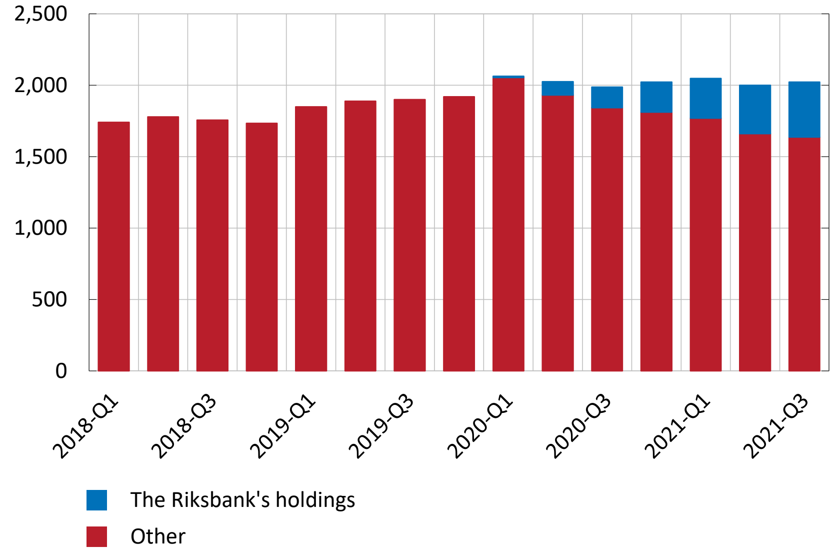
Up to 29 October 2021, the total purchases of covered bonds amounted to SEK 410 billion and the Riksbank's holdings amount at present to about 20 per cent of the total outstanding volume issued in Swedish kronor (see Chart 32). Since the purchases started, they have corresponded to just over 40 per cent of the covered bonds issued in the market (see Chart 33). By 31 December 2021, the Riksbank shall have purchased covered bonds for SEK 435 billion. The Riksbank has forecast that its total asset holdings will be more or less unchanged in 2022.[138]

[137] Other central banks, such as the European Central Bank and the Federal Reserve, also expanded their asset purchases. See J. Birging and D. Hansson (2021), "the Riksbank's asset purchases during the coronavirus pandemic", *Economic Commentaries* No 12, Sveriges Riksbank for more information.

[138] See *Monetary Policy Report*, September 2021, Sveriges Riksbank.

Chart 32. Outstanding volume of Swedish covered bonds and the Riksbank's holdings

SEK billion

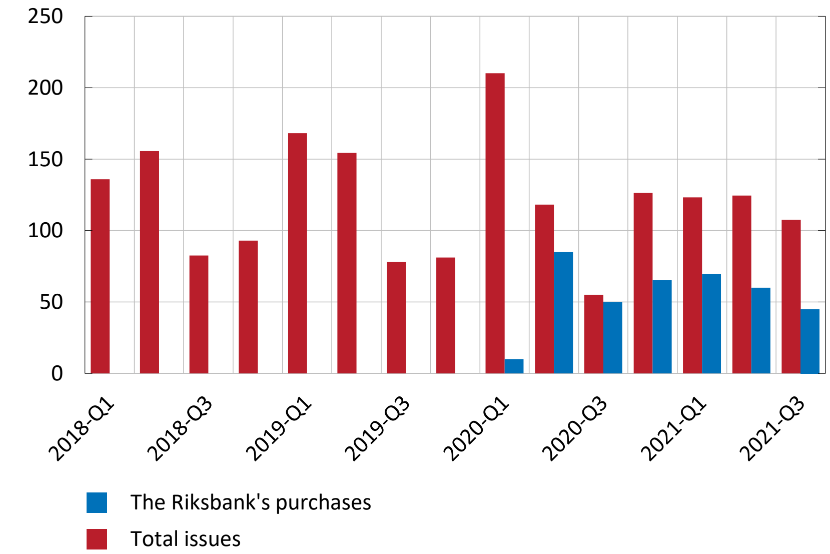


Note: Refers to Swedish covered bonds issued in Swedish kronor.

Sources: Statistics Sweden and the Riksbank.

Chart 33. Total issues of Swedish covered bonds and the Riksbank's purchases

SEK billion



Note: Refers to Swedish covered bonds issued in Swedish kronor.

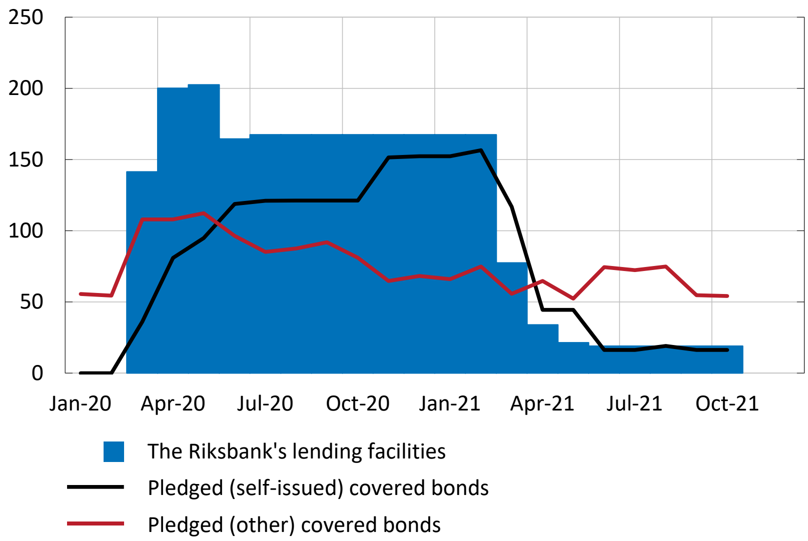
Sources: Statistics Sweden and the Riksbank.

The Riksbank temporarily eased the collateral requirements in its loan terms

When the Riksbank provides credits to its counterparties, they are required to provide adequate collateral in exchange. The Riksbank eased the collateral requirements during the pandemic to strengthen banks' access to liquidity in Swedish kronor and to promote the impact of the lending programme to banks, which was aimed at supporting corporate lending. This easing meant that the special limit rules applying to covered bonds were abolished and that self-issued covered bonds, that is covered bonds issued by the counterparty itself, could start to be used as collateral.[139] In this way, the banks could use significantly more covered bonds for credit at the Riksbank. As the banks borrowed from the lending facilities launched by the Riksbank during the pandemic, the amount of covered bonds pledged as collateral in the Riksbank increased, and the increase consisted almost exclusively of the banks' self-issued bonds (see Chart 34). As the volume borrowed by the banks decreased in the spring of 2021, the amount of self-issued covered bonds pledged at the Riksbank also decreased. On 21 September 2021, the Riksbank closed the lending facilities that were launched during the pandemic. At the turn of the year, the collateral requirements will also revert to those that applied before the pandemic.[140]

Chart 34. Volume borrowed in the Riksbank's lending facilities and pledged covered bonds

SEK billion



Source: The Riksbank.

[139] This easing meant that the highest permitted share of covered bonds in a counterparty's total collateral for credit at the Riksbank was raised from 60 per cent to 100 per cent and that the highest permitted collateral value for covered bonds issued by an individual issuer, or group of individual issuers, was raised from 50 per cent to 100 per cent.

[140] The stricter collateral requirements and limits will be reinstated on 3 January 2022. With regard to outstanding loans in the programme for funding to banks to support corporate lending, the existing collateral requirements will apply until the loan has been paid. See *Monetary Policy Report*, September 2021, Sveriges Riksbank.

The measures helped to stabilise the market and keep interest rates low

The Riksbank's purchases improved the functioning of the covered bond market at the beginning of the pandemic, partly by reducing market participants' concerns that they would not be able to find buyers for their holdings if they wanted to sell. The risk premiums on covered bonds rose sharply at the start of the pandemic, but then fell up until autumn 2020 (see Chart 22 in Chapter 2), a development the purchases probably contributed to. However it is difficult to determine the degree to which the Riksbank's purchases affected interest rates, given the turbulence that prevailed and given that many measures were implemented at the same time, both in Sweden and abroad.

At present, both yields and risk premiums are on a historically low level. Yields have also fallen for bonds issued by institutions from which the Riksbank has not purchased and for types of bond the Riksbank has not purchased, which may indicate that the purchases have had a broad impact on the market.[141] The low interest rates have contributed to the banks' lending rates to households and companies not having risen and helped to maintain lending.

The investor structure has changed and activity has declined

The investor structure in the market has changed during the pandemic. Above all, it is foreign investors who have gradually sold off their holdings of covered bonds (see Chart 35). This has happened as the Riksbank has made purchases and as risk premiums have fallen. For other investor categories, the changes have generally been small. This could be because other participants, such as insurance companies and pension funds, have a more long-term investment horizon. However, the funds sold a certain amount of their holdings at the start of the pandemic when redemptions from unit-holders increased as a result of the unease. The banks' holdings increased somewhat in the initial stage of the pandemic, but are at present back at roughly the same level as before the pandemic.

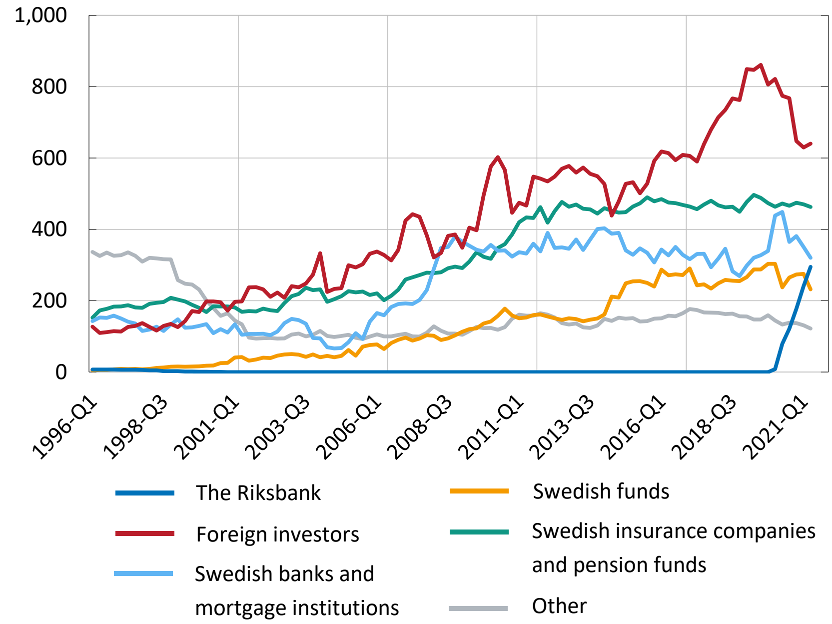
Some market investors are generally more flighty and more sensitive to changing market conditions, including some foreign investors. In addition, foreign investors do not often have a need for assets in a specific currency, like Swedish kronor, but can change currency on the basis of what suits their risk profile in different situations. They may therefore be more likely to sell off their holdings of covered bonds in a stressful situation, as happened during the global financial crisis of 2008-2009. When a large proportion of investors wish to sell their holdings at the same time, there may be several negative consequences, not least given the size and importance of the Swedish market for covered bonds. If there are not sufficient buyers, it may aggravate

[141] The Riksbank purchases so-called benchmark bonds issued in Swedish kronor by Swedish institutions with resale agreements. See J. Alsterlind (2021), "The development of risk premiums on covered bonds during the coronavirus pandemic", *Economic Commentaries* no. 13, Sveriges Riksbank for a more in-depth review.

an already stressed situation. Ultimately, it may make it more difficult for banks to fund themselves through covered bonds.

Chart 35. Owners of Swedish mortgage institutions' bonds

SEK billion



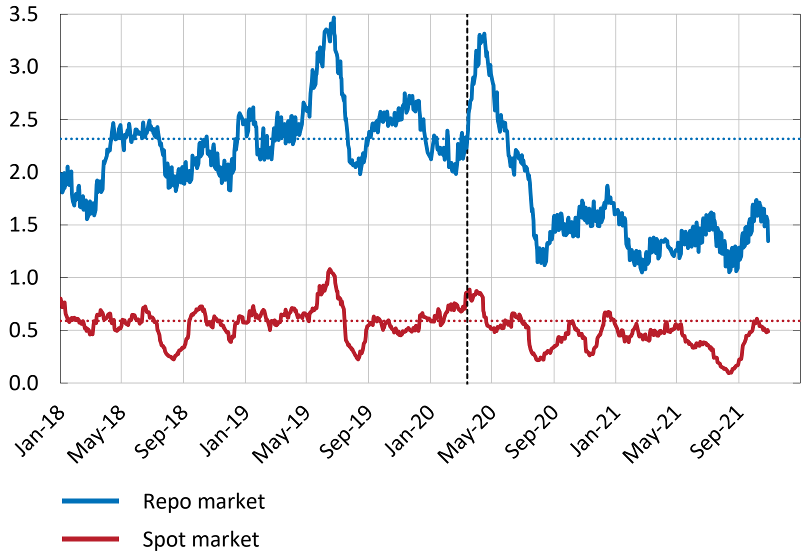
Note: Refers to Swedish mortgage bonds issued in all currencies.

Source: Statistics Sweden.

Activity in the secondary market, i.e. the trading between different investors, has also decreased slightly during the pandemic (see Chart 36). This applies both to the spot market and to the repo market, where a repo means that a bond is borrowed or lent out for a certain period of time. However, the fall is most substantial in the repo market. The Riksbank's purchases may have contributed to a reduction in turnover as they have decreased the supply of bonds freely available for trade in the market. The reduced presence of foreign participants has also contributed to the decrease, above all in the repo market, where foreign hedge funds, for instance, are usually active.

Chart 36. Daily turnover in the secondary market

Per cent of total outstanding volume



Note: Rolling average 30 days. Horizontal broken lines refer to the average prior to the coronavirus pandemic. Refers to covered bonds issued in Swedish kronor.

Sources: SELMA and Statistics Sweden.

The Riksbank's pandemic measures are motivated but agents cannot always expect support

Despite the change in the market for covered bonds during the pandemic, the banks' funding possibilities via covered bonds remain good. The banks have issued covered bonds throughout the pandemic to sustain the market and maintain their relationships with investors. If some of the deposits that increased during the pandemic decrease going forward, the banks may need to issue more bonds, which they are deemed able to do.

It is important that the banks reflect over the composition of their investor structure and are aware that some investors, often foreign ones, historically have turned out to be more flighty in turbulent situations, which creates stress unless there are other participants who wish to purchase. The larger the proportion of the covered bonds that are owned by such flighty investors, the greater the stress may be in such situations. Therefore, to maintain stability in the market, it is important that the banks have an investor structure with a long-term investment horizon so that individual groups of investors do not risk exacerbating a development that is already stressed. To support this, it is important that there is satisfactory data on the ownership of the bonds, and that the banks work to become more transparent regarding the structure.

During the pandemic, the banks have used the Riksbank's lending facilities and have pledged their own covered bonds as collateral for these to a high degree. At present, almost everything borrowed from the Riksbank has been repaid, at the same time as the Riksbank has communicated that the collateral requirements will be restored. The Riksbank has also begun to taper its purchases of covered bonds during 2021.

The support measures implemented have helped the financial system to function satisfactorily during the pandemic. The measures are motivated but, at the same time, may add to the vulnerabilities in the financial system over the longer term.

Another concern is the financial sector relying on government measures to always protect banks and other financial agents from losses in a crisis. Going forward, this may also lead to excessive risk-taking, so-called "moral hazard", and to vulnerabilities accumulating in the financial system. It is important for financial agents to realise that they cannot always count on support measures. The measures implemented during the pandemic were aimed at improving the situation for the market as a whole and the entire economy, rather than supporting individual institutions. In addition, both companies and households should make allowances for the possibility that their interest expenses may rise going forward, not least because current interest rate levels are low from a historical perspective.

Glossary

Anti-dilution levies: Fees that are collected from investors in connection with the sale and redemption of mutual fund units. This is to compensate for the transaction costs that the fund incurs for the purchase and sale of underlying assets that follow from subscription or redemption of fund units. Like swing pricing (see further down in the glossary), the purpose is to prevent transaction costs from affecting existing or remaining shareholders in the fund, i.e. to prevent dilution of the fund's assets.

Bankruptcy: A company or its creditors can file for the company to be put into bankruptcy. The decision is taken by a district court. A bankruptcy takes place when the company cannot pay its debts, neither now nor in the future, and means that the company is wound up.

Capital market: Covers the market for commercial paper and corporate bonds.

Capital requirements: Rules for the minimum amount of loss-absorbing capital a financial undertaking must hold to cover its risks.

CCP, central counterparty: An intermediary in financial transactions that goes in as buyer to all sellers and seller to all buyers, respectively. The original parties in a transaction then have a claim on, or debt to, the central counterparty instead of each other.

CDS, Credit Default Swap: Contract between participants in the credit market aimed at transferring the credit risk in an underlying asset from one participant to another.

Climate-related risks: Risks associated with not only the effects of global warming but also of the transition itself.

Commercial paper: Securities issued by non-financial corporations in order to borrow money. The maturity of these instruments is usually shorter than one year.

Commercial property: Commercial property is real estate owned in order to generate income via letting.

Common Equity Tier 1 (CET 1) capital: Tier 1 capital with a deduction for capital contributions and reserves that may be included in the capital base as Tier 1 capital in accordance with the Capital Adequacy Directive.

Common Equity Tier 1 (CET 1) capital ratio: Common Equity Tier 1 in relation to risk-weighted assets.

Corporate bond: Securities issued by non-financial corporations in order to borrow money. The maturity is mostly longer than one year.

Countercyclical capital buffer: A time-varying capital requirement with the primary purpose of increasing resilience in good times so the banks can bear losses in bad times.

Covered bond: A bond whose holder has a special benefit right in the event of a bankruptcy. Covered bonds normally entail a lower credit risk than unsecured bonds, which means that the borrowing costs are lower.

Credit facility: An agreed borrowing limit with credit up to a specific amount, for which the borrowing company normally pays a fee.

Credit risk: The risk of a borrower failing to meet commitments.

Currency swap: An agreement to buy or sell a currency at the daily rate and then sell or buy back the same currency on a later date at a pre-determined rate.

Cyber risk: Combination of the probability of cyber incidents and their consequences, where a cyber incident is an event in an information system that jeopardises security in the information system or contravenes security policies.

Debt-to-income ratio: Total household debt in relation to disposable income.

Disposable income: A person's or household's total income less taxes and charges.

Equity: Item in a company's balance sheet showing the difference between assets and liabilities, including, for example, capital provided by owners, retained profits and reserves.

Interbank rate: The interest rate on unsecured loans between larger banks. STIBOR (Stockholm Interbank offered rate) is to reflect the interest rate on such loans and is today the dominant reference rate in Swedish kronor. STIBOR is used as a reference for loans, interest-bearing securities and derivative contracts.

IFRS, International Financial Reporting Standard: Global accounting standard that has been developed by the International Accounting Standards Board (IASB), and which all listed companies in the EU are obliged to apply.

IFRS Foundation, International Financial Reporting Standards Foundation: A non-profit accounting organisation with the primary objective of developing and promoting IFRS through the International Accounting Standards Board (IASB), which it oversees.

LCR, Liquidity Coverage Ratio: Liquidity measurement that measures a bank's ability to deal with a stressed net outflow of liquidity for 30 days.

Leverage ratio: A measure that specifies the bank's Tier 1 capital in relation to the total exposure amount (calculated based on its total assets and off-balance-sheet items).

Liquidity buffer: Funds an institution holds to ensure its short-term debt-servicing ability.

Liquidity risk: The risk of not being able to meet payment commitments due to a lack of liquidity.

Loan guarantee: A guarantee commitment by, for example, the state to guarantee repayment of a loan amount.

Loan loss: Loss made by credit institutions and banks when borrowers cannot pay interest or amortisation on their loans.

Margin collateral requirement: Requirement imposed on a counterparty in a derivative contract to pledge additional collateral because the value of the underlying assets has changed.

Moratorium: A decision by an authority that the borrower no longer has to pay interest or amortisations for a limited period. Payments are postponed and must be paid later on.

MREL, Minimum Requirement for own funds and Eligible Liabilities: A requirement aimed at ensuring that banks and institutions have a sufficiently large share of bail-inable liabilities that can be written down and converted into capital if they fail and need to be managed by means of resolution. The requirement is decided by the Swedish National Debt Office.

NSFR, Net Stable Funding Ratio or **structural liquidity ratio**: Measure of how much stable funding a bank has in relation to its illiquid assets.

Reconstruction: A company or its creditors can file for the company to be reconstructed. The decision on this is taken by a district court. Reconstruction occurs when the company has financial problems but can survive in the longer term. The aim is for the company to be able to continue its operations.

Redemption gates: Redemption gates are a form of deferment of redemption, that is, temporary closure of trading in mutual fund shares. Redemption gates can also be made with limits, which means that if the total redemption request in a fund exceeds a certain limit, the fund manager may postpone the redemption of the surplus part.

Risk premium: The additional return an investor requires as compensation for an additional risk.

Risk weight: Determined on the basis of how likely it is that the borrower will be unable to fulfil its loan obligations and varies from borrower to borrower – a high risk weight implies a greater risk than a low risk weight. In simplified terms, to calculate a bank's risk-weighted assets, the amount lent is multiplied by a risk weight.

Risk-weighted exposures or **risk-weighted assets**: Assets on the balance sheet and off-balance sheet obligations valued in terms of credit risk, market risk and operational risk in accordance with the capital adequacy regulations.

Share buy-back: When a company buys back its own shares from investors, which can be seen as an alternative way of giving dividends to shareholders.

Solvency: Financial measure of a company's ability to fulfil its commitments. Also a measure of an insurance company's financial position that gauges the size of the companies' assets in relation to its debts, which mainly consist of their total commitments.

Stablecoin: A crypto asset whose value is tied to the value of other assets, such as one or more national currencies or other financial assets. The idea of stablecoins is that the value should be stable over time, and that issued stablecoins should be backed by the underlying assets.

Swing pricing: Means either that the fund part value is adjusted or that the sales and redemption price for mutual fund units is adjusted. The fund unit value means that the price of the fund units is adjusted up or down, depending on the net flows in the fund. The purpose is to allocate the fund's costs for buying and selling the underlying assets to the unit-holders causing the net flows so that the remaining unit-holders do not need to cover these transaction costs.

Systemic risk: The risk that a shock will occur in the financial system that could lead to substantial costs for society.

TCFD, Task Force on Climate-related Financial Disclosures: Created in 2015 by the Financial Stability Board for the purpose of developing recommendations for voluntary and consistent reporting of climate-related financial risks and opportunities.

TIBER-SE: The Swedish adaptation of the European Central Bank's TIBER-EU framework. The framework enables the standardised testing of resilience to cyber risks among critical participants in the financial system.

Tier 1 capital: Equity less proposed dividends, deferred tax assets and intangible assets, such as goodwill. Tier 1 Equity may also include some types of subordinated loan.

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