SVERIGES RIKSBANK

Financial Stability

2023:2

Correction 9 November 2023

Chart 11 (right-hand chart) has been updated as it was incorrect in the previous version.

The previous version referred to 34 listed property companies on page 28, and in Charts 14 and 15. However, not all companies are listed, so the text has been updated.

Correction 16 November 2023

Chart 14: The scale on the y axis has been adjusted, and the loan-to-value ratios in the right-hand chart have been corrected.

The Riksbank's Financial Stability Report

The Riksbank's Financial Stability Report is published twice a year. In the report, the Riksbank presents its overall assessment of the risks and threats to the financial system and evaluates the system's resilience to them. The work on the stability analysis is thus directly linked to the Riksbank's task of monitoring the financial system and the objective of contributing to its stability and efficiency. By publishing the results of its analysis, the Riksbank aims to draw attention to, and warn of, risks and events that may 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 25 October and on 8 November 2023. The report is available on Sveriges Riksbank's website, www.riksbank.se. The Report takes into account developments up to and including 2 November 2023.

The Riksbank and financial stability

A prerequisite for the economy to function and grow is a well-functioning financial system. The system must be able to process payments, convert savings into funding and manage risks, and also be resilient enough to be able to maintain these functions to the highest degree possible when shocks occur. But the system is sensitive as its key elements are vulnerable. For example, banks fund their activities on a short-term basis but lend on a longer-term basis, making them dependent on public and market confidence. If this is lost, serious problems can quickly arise. Moreover, the participants in the financial system are interconnected, for example because they borrow from each other, obtain funding on the same markets or have similar operations. Problems that arise with a participant, in a market, or in a system, can therefore quickly spread, both directly and due to concerns that other participants might also encounter problems.

A crisis in the financial system risks leading to significant economic costs. The importance of the financial system, combined with its vulnerability, means that the state has a particular interest in preventing threats to financial stability. Banks and other market participants do not themselves have an incentive to take full account of the stability risks they may pose. If a crisis were to occur, despite preventive measures, the state might also need to intervene, which, in such an eventuality, should be done at the lowest possible cost.

According to the Sveriges Riksbank Act, the Riksbank shall contribute to the stability and efficiency of the financial system. A core task is therefore to oversee the financial system. This includes identifying risks of serious disturbances or significant efficiency losses, assessing whether the financial system is stable and efficient, and reporting its assessments. The Riksbank also has the special task of overseeing the financial infrastructure and other operations that are of particular importance for this infrastructure. In the Financial Stability Report, the Riksbank gives an account of its analyses and assessments of the stability and efficiency of the financial system twice a year.

The Riksbank also has important tasks related to the provision of liquidity in the event of a financial crisis. To counteract a serious shock to the financial system in Sweden, the Riksbank is able to offer liquidity support to one or more financial companies or markets. Oversight of the financial system is also vital for the Riksbank to be able to act quickly and efficiently in the event of a financial crisis.

The Riksbank shares responsibility for the stability and efficiency of the financial system with the Ministry of Finance, Finansinspektionen (the Swedish financial supervisory authority) and the Swedish National Debt Office. The interplay between the authorities is vital both in preventive measures and in any crisis management. Cooperation with authorities in other countries is also important as financial undertakings are often cross-border in nature.

IN BRIEF – The Riksbank's stability assessment

Inflation has fallen, but is still high. Central banks have stated that although the largest rate increases have probably already taken place, it may take time before policy rates are cut. Longer-term market rates have also risen recently. Greater geopolitical tension may affect the inflation and economic outlook and lead to greater turbulence in financial markets. After a long period of low interest rates and rising asset prices and indebtedness, it is uncertain how agents will adjust to higher interest rates. This is also true in the Swedish economy, where interest-rate sensitivity is a vulnerability. Higher interest rates are squeezing both property companies, to which banks are very exposed, and highly indebted households. Although the financial system is functioning well, risks remain elevated.

The higher interest rates are affecting property companies via higher funding costs and lower property values. The situation is particularly difficult for some companies, while others are better placed to manage it. However, if interest rates rise further or remain at a higher level for a long time and economic activity slows down even more, more serious problems may arise. Property companies therefore need to reduce their financial risks. Banks also have an important role to play, by maintaining credit supply to viable companies and by requiring property companies to take corrective measures.

High indebtedness and short interest-rate fixation periods are making households sensitive to shocks. In an adverse scenario where households find it even more difficult to cope with cost increases and consumption declines sharply, banks' loan losses could increase and financial stability could be negatively affected. The Riksbank considers that structural reforms are needed to improve the functioning of the housing market and contribute to long-term sustainable debt development. Moreover, it is important to retain the mortgage cap and amortisation requirements. However, the option of exemptions from the amortisation requirements for special reasons is positive.

The Riksbank's calculations indicate that banks have sufficient capital to deal with significant problems in the property sector. However, in such a scenario, confidence in the banking system and therefore banks' funding conditions could deteriorate, which may affect their ability and willingness to supply credit. The calculations do not take into account such confidence effects. Banks should take into account the uncertain economic situation when making their loan loss provisions and should also ensure that, even after the provisions, there are ample margins over their capital requirements. The Riksbank considers that the major Swedish banks should for the time being aim to have a margin over their formal capital requirements that is not less than the upper limit set by the banks themselves for their management buffers. This can be achieved by restricting dividends and share buybacks.

This spring's banking problems in the US and Switzerland showed that there may be a case for reviewing global regulatory standards for banks. The international work that has now begun to examine these issues is therefore important. In light of the problems that arose, the Riksbank has analysed the deposits in 24 Swedish banks. The analysis shows that the deposits vary in flightiness, and may be particularly flighty at some smaller banks. The fact that new technologies and social media may have made deposits more flighty makes it is important to continue monitoring the risks associated with deposits going forward.

1 Overall stability assessment

Higher interest rates and heightened geopolitical tension are contributing to continued elevated risks

Inflation has moderated globally, but this is largely due to falling energy prices and underlying inflation remains high in a number of countries. Many central banks have communicated that although the largest rate increases are likely to have already taken place, it may be a long time before policy rates are cut. Longer market rates have also risen since the previous Financial Stability Report, particularly in the United States, and movements in the fixed-income market have at times been substantial.

The higher cost environment is affecting households and companies, and dampening growth in the global economy. However, many agents have not yet been fully affected. After many years of low interest rates, rising asset prices and increasing indebtedness, it is uncertain how agents are coping with the transition to higher interest rates.

An additional factor that could trigger a negative development is the geopolitical situation and its economic impact. This concerns Russia's invasion of Ukraine, the conflict in the Middle East and also the increased tension between the United States and China. If the situation were to worsen, it could lead to increased turbulence in financial markets, with spillover effects to Sweden.

So far, the Swedish financial system has coped well with the challenges posed by the rapid rise in inflation and interest rates. Thanks in part to the economic policy frameworks introduced after the crisis of the 1990s, the Swedish economy, in several respects, is in a relatively favourable position to cope with stress. However, there are vulnerabilities that have long characterised the Swedish economy and that are now contributing to higher-than-normal risks to the financial system. This applies in particular to the banks' exposure to highly-indebted property companies, and to the high household indebtedness.

Significant differences in the squeezed property sector

Higher interest rates are increasing the funding costs of property companies and decreasing the value of property. For some companies, the situation is particularly difficult. However, differences between companies in terms of their capital structure, earning capacity, ownership structure and business specialisation mean that their prerequisites for dealing with higher interest rates are different. This is reflected in the conditions they face in the bond market, where some property companies have faced significantly higher interest rates than others. Recently, issuance in the sector has increased, indicating that their funding conditions have improved somewhat.

However, funding costs will continue to rise, as interest-rate fixation periods for bank loans expire and bond loans need to be refinanced. If interest rates rise further or remain at a higher level for a long time and economic activity slows down further, more property companies may face problems. It is therefore important that companies reduce their financial risks. Banks also have an important role to play here. They need both to maintain the supply of credit to viable companies and, within the framework of their lending, to require property companies to take measures to reduce their financial risks.

High indebtedness and short interest-rate fixation periods are causing household interest expenditure to rise rapidly

Price increases and interest rates weigh on households and dampen consumption. But the labour market has so far withstood the economic downturn well, which means that most households still have income from employment. Households have also been able to use the buffers they built up during the pandemic. Although reduced household consumption is having a negative impact on the economy, households are on the whole able pay their mortgages. The risk of payment problems is higher for consumer loans, which may also cause problems for consumer credit companies.

Households' interest rates will continue to rise as the policy rate rises have not yet taken full effect. Based on previous policy rate increases and the forecast for the policy rate, the Riksbank estimates that around 70 per cent of the total expected increase in mortgage rates has so far reached households. A significant deterioration in the labour market situation could make it much more difficult for households to cope with further cost increases. This, in turn, would weaken macroeconomic developments and could lead to a much larger increase in the number of bankruptcies than has been the case so far.[1] This could ultimately lead to higher loan losses among banks. In such a scenario, financial stability could also be adversely affected.

The major banks are well placed to cope with a weaker economic situation

To get an idea of how banks would be affected if the financial situation of property companies were to sharply deteriorate, the Riksbank has supplemented the stress tests from the previous Financial Stability Report with some sensitivity analyses. These indicate that banks have sufficient capital to deal with significant problems in the property sector. However, in such a scenario, confidence in the banking system and therefore banks' funding conditions could deteriorate, which may affect their ability and willingness to supply credit. The calculations do not take into account such confidence effects.

Banks should take into account the uncertain economic situation when making their loan loss provisions and should also ensure that, even after the provisions, there are ample margins over their capital requirements. The Riksbank considers that the major Swedish banks should for the time being aim to have a margin over their formal capital requirements that is not less than the upper limit set by the banks themselves for their management buffers. This can be achieved by them restricting dividends and share buybacks.

[1] See also the article "Company bankruptcies on the rise".

The Riksbank has analysed deposits in Swedish banks

Deposits are an important part of banks' funding and have traditionally been considered a more stable source of financing than market funding. However, deposits can also be flighty if confidence in a bank is lost. Moreover, the banking turmoil in spring 2023 showed that banks can lose their deposits much more quickly than previously thought. The Riksbank has therefore conducted an in-depth analysis of deposits in 24 Swedish banks.[2] The analysis shows that some banks have a higher concentration of deposits from individual depositors, but there is no evidence that deposits in any of the banks are particularly concentrated in a single sector. The data also show that banks with a higher share of deposits not covered by deposit insurance hold a larger liquidity buffer. Moreover, compared with the US banks that experienced problems last spring, Swedish banks' share of uninsured deposits is significantly less, in relation to both their total deposits and total liabilities.

At the same time, the results indicate that deposits may be more flighty at some smaller banks, particularly uninsured deposits. This was observed, for example, during the outbreak of the coronavirus pandemic. Several consumer credit banks also have a large share of deposits in Germany, partly through digital deposit platforms, which are likely to be more flighty. These developments, and the fact that new technologies in general may have made deposits more flighty, require increased vigilance and it is important to continue to analyse them going forward. The Riksbank's data collection and analysis of the banks' deposits increases the understanding of the risks and provides a basis for further analyses and stability assessments.

Global regulations need to be evaluated

The banking problems in the United States and Switzerland in the spring revealed several new characteristics that have implications for the design of global regulatory standards for banks. This concerns, for example, the flightiness of deposits and whether the outflow assumptions in the banks' liquidity frameworks are sufficiently stringent. The banking problems also highlighted the need for banks to strengthen their internal risk management. The fact that the Swiss authorities did not use the resolution framework as intended also raises the question of whether the resolution framework needs to be modified to become more useful. Work has now begun at the international level to investigate these issues. To make the regulations more robust in the near term it is important that Basel III is implemented in a full, timely and consistent manner.[3] This is not least true in the EU, where the proposal currently being finalised entails a relaxation of Basel III. In addition, it is worth noting that the regulatory framework in the US covers a significantly smaller share of the banking system than in the EU.

Financial institutions other than banks, such as investment funds, have come to form an increasingly large and important part of both the Swedish and global financial systems. They now account for a large share of the supply of capital to the real economy. In many cases, they are also linked to the banking sector. Unlike the banking sector,

[2] See also the article "Flightiness of deposits varies across Swedish banks".

[3] See Basel III: Finalising post-crisis reforms, December 2017. Bank for International Settlements.

however, there is no well-developed framework for macroprudential policy for these institutions, to take one example. The Riksbank considers it important to put such a framework in place. As these institutions have cross-border operations, this work needs to be conducted primarily at an international level, preferably via the Financial Stability Board (FSB) and the European Systemic Risk Board (ESRB).

Higher oil and natural gas prices, partly linked to increased geopolitical tensions, are helping to accelerate the transition to a fossil-free society. However, this also increases risks for institutions that are exposed to sectors with high carbon emissions. This underlines the importance of financial institutions taking climate risks into account in their analyses and in their internal governance and reporting. It is therefore positive that transparency requirements will increase with the EU's European Sustainability Reporting Standards (ESRS) regulation. The Riksbank considers that Swedish banks should report their exposures to climate risks in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) until the ESRS begins to apply.

The transparency and liquidity of the corporate bond market needs to be improved

At the beginning of the pandemic in 2020, the Swedish corporate bond market experienced major disruptions, which were exacerbated by the lack of transparency and liquidity in the market. Larger and more homogeneous bond issues can help make the market less vulnerable. The Riksbank has therefore supported the development of a Swedish benchmark standard and calls on major Swedish companies and the banks that support companies in the issuance process to commit to issuing bonds in accordance with the standard. The Riksbank intends to continue to promote greater use of the standard.

A further prerequisite for a smoothly functioning corporate bond market is the correct pricing of credit risks. The increased use of credit ratings can play a role. However, some of the recent behaviour of credit rating agencies has raised questions about the reliability of ratings. Although the risk-taking of property companies has been well known, and in particular their sensitivity to interest rates and their need for market funding, rating agencies have been slow to adjust their assessments since interest rates started to rise. Once they have done so, some property companies have been rapidly downgraded, sometimes in several steps within a short period of time. This may give the impression that their methodology is not robust and lacks transparency, but also that before the rise in interest rates, it was too easy to obtain an investment grade rating.

Fund managers also have a major responsibility to intensify their efforts to manage liquidity risk in corporate bond funds. In particular, they need to increase the share of assets that are liquid even under more stressful market conditions, or to limit redemption options for unit-holders. It is important to emphasise to unit-holders that holdings are not liquid under all market conditions and that immediate redemptions are therefore not always possible. In addition to this, various liquidity tools can help fund managers manage large-scale redemptions. Swing pricing, which is now allowed in the legislation for Swedish funds, is a tool that funds can use and fund managers should urgently apply to introduce it.

The banks urgently need to take responsibility for future payments infrastructure

The financial system requires a functioning payments infrastructure. At present, only Bankgirot provides an infrastructure for clearing payments in Sweden. It is therefore problematic that the banks, as owners of Bankgirot, have previously given the development of Bankgirot's existing system a lower priority. Recently, Bankgirot was commissioned by its owner banks to develop a plan to deliver a new infrastructure, which is positive. The assignment is a challenge for Bankgirot, which also needs to ensure that its existing systems are available as long as they are needed. The banks therefore need to ensure that Bankgirot is given the prerequisites to develop and has staff with the necessary technical expertise. The Riksbank is closely monitoring how the banks manage Bankgirot and the work on the new plan.

The use of transaction-based reference rates needs to increase

To ensure strong confidence in reference rates, which serve as a benchmark for pricing financial contracts, they need to be based on actual transactions. Since September 2021 the Riksbank has therefore been publishing the fully transaction-based reference rate, SWESTR. Most other currency areas have already fully or partially switched to transaction-based reference rates. In Sweden, progress has been slower and the use of SWESTR is still modest. It is therefore important that market participants and authorities promote the use of SWESTR and thus take joint responsibility for ensuring that Sweden's reference rates are relevant and harmonised with the rest of the world. For this reason, the Riksbank runs a forum to promote the use of SWESTR and the Swedish Bankers' Association has a working group with the aim of producing recommendations for a transition from STIBOR T/N to SWESTR.

Financial institutions should strengthen their ability to recover from a cyber attack

The risk of the financial system being damaged by cyber attacks remains high. Both financial companies and the relevant authorities are currently working actively to identify vulnerabilities and improve resilience. The work includes regular crisis exercises, for example under the auspices of the group for private-public cooperation in the financial sector (FSPOS), and simulated penetration tests under controlled conditions, for example in the framework of TIBER-SE. The Riksbank also conducts surveys on cyber risks among financial companies. In this way, knowledge is gained about what needs to be improved, for example in terms of detection and ability to recover. An important task for the companies concerned and the stability authorities, as well as for bodies such as the National Cyber Security Centre (NCSC), is to translate this new knowledge into concrete measures, for example in the form of lists of requirements that stakeholders should implement. Other important tasks include the systematic processing and sharing of information on threats and cyber incidents. In this perspective, the NCSC being given a principal, in the form of the National Defence Radio Establishment (FRA), is a welcome development. It is also positive that the Government has appointed a commission of inquiry to make proposals on how to improve operational crisis management in the event of serious operational disruptions in the financial sector.

Reforms can improve the functioning of housing and mortgage markets

The Riksbank considers it important to retain Finansinspektionen's borrower-based macroprudential policy measures, such as the amortisation requirements and the mortgage cap. These promote sound lending practices and strengthen the amortisation culture over time. However, it is positive that the amortisation requirements are designed with a degree of flexibility through the so-called "valve", whereby mortgagors can be exempted for special reasons. If the housing market is to function better in the long term, a broad review of housing and tax policy is needed, which could include a review of tax relief on interest payments, taxation of property and the regulatory framework for new housing production.

If early redemption of loans were cheaper, households would have greater incentives to choose loans with a longer interest-rate fixation period, something that would help make the household sector as a whole less sensitive to interest rates. It is therefore important that the inquiry's proposal on a change to mortgage prepayment penalties actually leads to a change.[4]

Better statistics and registers strengthen authorities' preventive work

Information on the distribution of assets and liabilities among households would improve the ability to analyse the risks associated with household indebtedness and to assess households' resilience. The inquiry's proposal for new statistics on households' assets and liabilities would, if implemented, strengthen the Riksbank's ability to implement a well-balanced monetary policy and safeguard financial stability, as well as improve Finansinspektionen's ability to design accurate macroprudential policy measures.[5] In addition to this, the introduction of a national housing register would improve the functioning of the housing market by ensuring that tenant-owned apartments are seen as more secure collateral.[6] The inquiry's proposal on the need for a national debt and credit register is also welcome and would improve the conditions for fair credit assessment.[7]

[4] See *Inquiry on changed rules for calculating the mortgage prepayment penalty*, October 2023.

[5] See *En ny statistik över hushållens tillgångar och skulder* [*New statistics on household assets and liabilities*], October 2022, SOU 2022:51.

[6] See *Ett register för alla bostadsrätter* [A register of all tenant-owned apartments], July 2022, SOU 2022:39.

[7] See *Motverka riskfylld kreditgivning och överskuldsättning* [*Counteracting risky lending and over-indebtedness],* ToR 2021:108.

2 The macro-financial situation

As a result of the rapid tightening of monetary policy, the rate of inflation is slowing down in many countries. Financial conditions are generally tight, and longer-term interest rates have risen since the previous Financial Stability Report. High interest rates are putting pressure on rate-sensitive institutions, such as property companies and other companies whose business models are based on high leverage. Some institutions who rely on high leverage, such as US hedge funds, can amplify market movements if they need to sell financial assets quickly. Geopolitical risks are elevated and are contributing to the uncertainty surrounding economic and financial developments.

2.1 High inflation and higher market rates

Inflation is falling but remains high

Contractionary monetary policy in large parts of the world is starting to have an effect and inflation is on the way down in many countries. This also applies to underlying inflation – excluding energy – although the development here is slower.[8] Following the rapid policy rate hikes last year, many central banks have now begun to adjust monetary policy in more gradual steps (see Chart 1). Their communication has on the whole been interpreted to mean that policy rates are approaching their peak. However, central banks have also emphasised that rate cuts are considered to be far in the future.

Global growth has slowed down. However, in the United States growth has been relatively strong – much stronger than in the euro area, where for instance the German economy has shown signs of weakness. In China, developments are being dampened by the declining property market. Growth in Sweden has also softened, partly reflecting the fact that the rate-sensitive sectors of the Swedish economy in particular slow down when monetary policy is tightened.[9] There are also several signs that the labour market is starting to cool. Unemployment is rising slightly and the employment rate has fallen back somewhat in recent months.

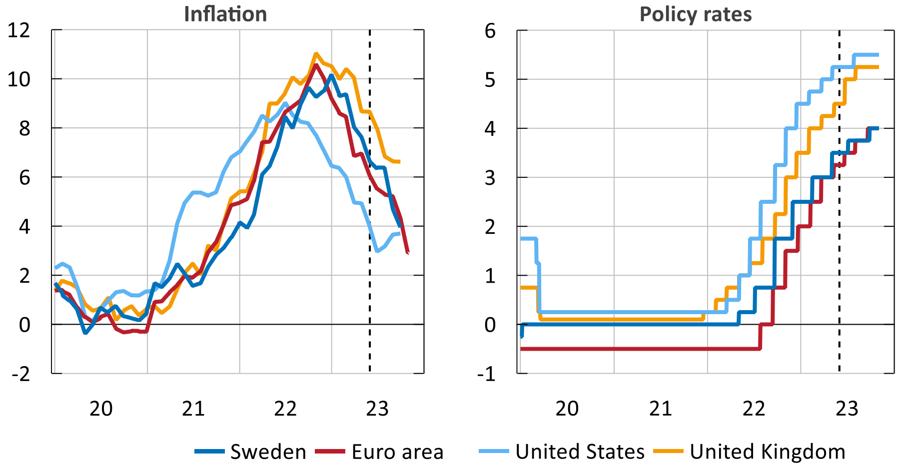
Geopolitical risks have increased, not least as a result of the conflict in the Middle East, which is contributing to uncertainty over economic and financial developments both abroad and in Sweden. For example, if the situation were to worsen, the possibility of world commodity prices beginning to rise again cannot be ruled out. As with climate and weather-related shocks, this may have implications for inflation and thus monetary policy.

[8] See Chart A.1 in the Chart Appendix.

[9] See *Monetary Policy Report*, September 2023, Sveriges Riksbank.

Chart 1. Inflation and policy rates

Annual percentage change, per cent



Note. The chart on the left refers to the CPIF for Sweden, the HICP for the euro area and the CPI for the United Kingdom and United States. The chart on the right refers to the ECB's deposit rate for the euro area. The dashed line marks the date of publication of the last report.

Sources: Bank of England, ECB, Eurostat, Federal Reserve, Statistics Sweden, UK Office for National Statistics, US Bureau of Labor Statistics and the Riksbank.

Higher market rates are characterising developments in financial markets

Longer market rates have risen in many countries since the previous Financial Stability Report, particularly in the United States (see Chart 2). This development indicates that market participants, to a greater extent, have taken on board the message from central banks that interest rates need to remain at higher levels for a longer period of time. However, market participants seem to still be uncertain about future interest rates, which is in part reflected in the relatively large movements that have recently occurred in the fixed-income market.

Another important explanation for the rise in US interest rates is the increase in term premiums, which had long been at very low levels.[10] This means that investors are demanding higher compensation for holding interest-bearing securities with long maturities. This could be because the amount of government bonds available to the private sector has increased. The increased supply can be explained partly by the Federal Reserve reducing its holdings of government securities and partly by the need for the US government to issue a larger amount of new government bonds to finance the budget deficit. A further contributing factor may be the downgrading of the credit rating of the US government.

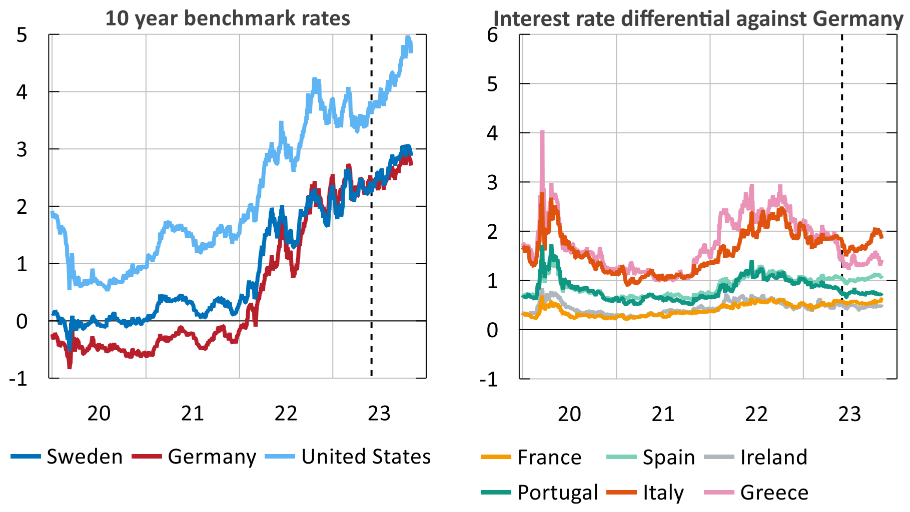
In Europe it has been possible to see in some cases that government bond yields for highly indebted countries, such as Italy, have also increased significantly (see Chart 2). This may reflect the fact that investors have become more concerned about the level of government debt in light of the high level of uncertainty over economic and financial developments. All else being equal, rising market rates lead to tighter financial

[10] See Chart A.2 in the Chart Appendix.

conditions. For highly indebted economies and institutions, this means that maturing loans may need to be refinanced at significantly higher costs than in the past, requiring them to have the financial scope to deal with this.

Chart 2. Government bond yields

Per cent, percentage points



Note. The dashed line marks the date of publication of the last report.

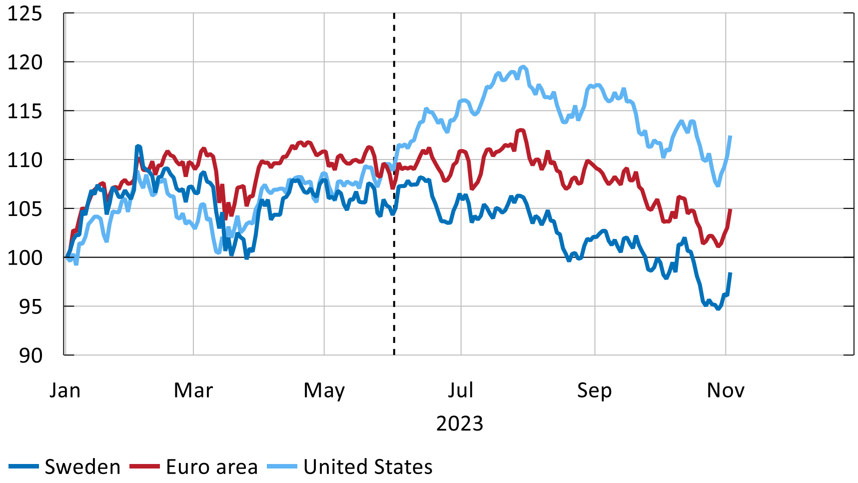
Source: Macrobond.

Rising long-term interest rates have contributed to a fall in equity prices in recent months and a renewed increase in the expected volatility of the US stock market (see Chart 3).[11] This uncertainty could lead to unusually large movements in markets as a result of new statistical releases and central bank signals. Similar effects may occur if the geopolitical situation escalates.

[11] See also Chart A.3 in the Chart Appendix.

Chart 3. Equity price development

Index, 2 January 2023 = 100



Note. Refers to equity indices for OMX Stockholm PI for Sweden, EURO STOXX for the euro area and S&P 500 for the United States. The dashed line marks the date of publication of the last report.

Source: Macrobond.

2.2 Higher interest rates are challenging business models

The property sector is being affected by the changed economic situation

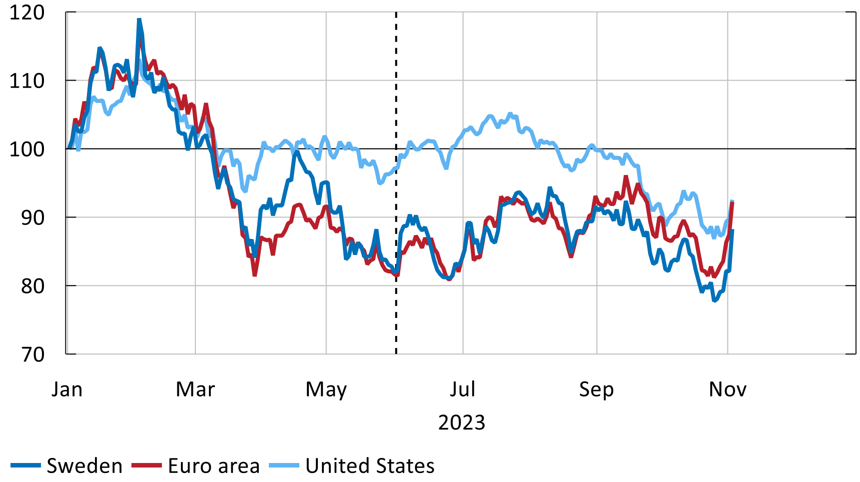
Many companies are being squeezed as higher interest rates gradually make their way onto their balance sheets. This applies, for example, to companies in the commercial property sector in many countries, which are often highly leveraged. Investors appear to remain cautious about the ability of property companies to meet increasing payment obligations and to manage the refinancing risks of their operations in an environment of tightening credit conditions.[12] This is partly evidenced by the generally weak development of equity prices for property companies over the past year (see Chart 4). Since the beginning of 2023, transaction volumes have declined sharply in the euro area and the United States, which has also coincided with falling commercial property prices.[13]

[12] See *The euro area bank lending survey - Third quarter of 2023*, October 2023, European Central Bank.

[13] See *Global Financial Stability Report*, October 2023, International Monetary Fund.

Chart 4. Equity price developments for property companies

Index, 2 January 2023 = 100



Note. Refers to OMX Stockholm Real Estate PI for Sweden, EURO STOXX Real Estate for the euro area and S&P 500 Real Estate (sector) for the US. The dashed line marks the date of publication of the last report.

Source: Macrobond.

Highly leveraged institutions can amplify market movements

The high level of interest rates, together with increased volatility in fixed-income markets, risks creating problems for institutions with business models based on high leverage ratios.[14] For example, US hedge funds have recently leveraged themselves heavily to speculate on US government bonds (see Chart 5). If hedge funds' borrowing costs rise sharply or if they are forced to post additional collateral for derivative contracts entered into, the consequence may be that they need to rapidly reduce their leverage, for example by selling large amounts of government bonds. This could further reinforce the fall in prices and market volatility.[15] This is somewhat reminiscent of what happened in March 2020 (the so-called "dash for cash") and could have negative effects on both the US government securities market and financial stability. Nowadays, however, there are liquidity facilities, set up by the Federal Reserve, which can alleviate, at least to some extent, any stress in the US government securities market.[16] However, if turbulence does occur, it could lead to Swedish banks' access to dollar funding becoming much more expensive or limited, which would affect their ability to lend dollars to Swedish insurance companies, for example. This type of situation may also have implications for the foreign exchange market (see the section "Short maturities and reduced liquidity in the foreign exchange market create risks").

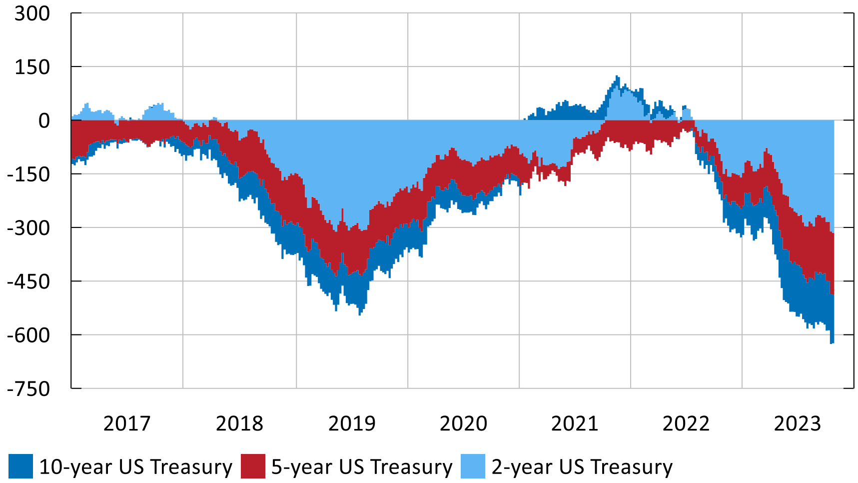
[14] For example, expected volatility in the US fixed-income market is at elevated levels; see Chart A.3 in the Appendix.

[15] See "Box A: Margin leverage and vulnerabilities in US Treasury futures" in *BIS Quarterly Review*, International banking and financial market developments, September 2023, Bank for International Settlements, and *Global Financial Stability Report*, October 2023, International Monetary Fund.

[16] For example, the *Standing Repo Facility* (SRF) and the *Foreign and International Monetary Authorities* (FIMA) *Repo Facility*.

Chart 5. Hedge funds' net positions in government bonds

USD billion



Note. Refers to the notional value of outstanding derivative contracts (futures) on US government securities with maturities of 2, 5 and 10 years. Positive values mean that they have made net purchases while negative values mean that they have made net forward sales of government bonds. Refers to hedge funds, Commodity Trading Advisors (CTAs), Commodity Pool Operators (CPOs) and other non-registered funds identified by the CFTC.

Source: Commodity Futures Trading Commission (CFTC).

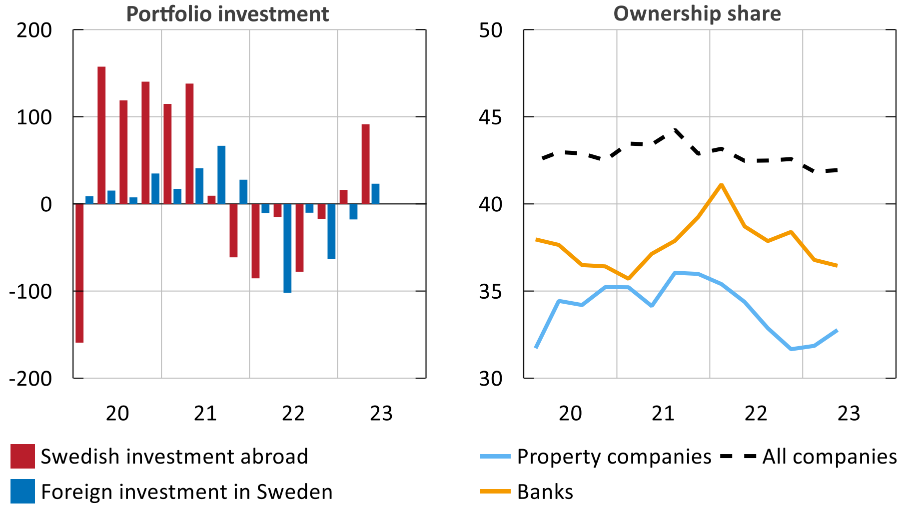
Foreign institutions have reduced their net investments in Swedish assets

Foreign institutions have reduced their net investment in some Swedish assets since the beginning of 2022, selling a net total of more than SEK 180 billion of Swedish equities and fund units, even though they again made net purchases of Swedish assets in the second quarter of 2023.[17] The net sales may be due to the Swedish economy's relatively high interest-rate sensitivity, and concerns over the Swedish property sector and its interconnectedness with the Swedish financial system, and have led to a decline in foreign ownership of Swedish listed companies, especially for Swedish property companies and banks (see Chart 6).

[17] Refers to data up to the end of the second quarter of 2023.

Chart 6. Foreign investment and ownership

SEK billion, per cent



Note. The chart on the left refers to net transactions in equities and fund units, where portfolio investment is an acquisition or sale of securities, after which the ownership share or voting rights in the company are lower than 10 per cent. The chart on the right refers to foreign ownership of equities in Swedish companies listed on Nasdaq Stockholm.

Sources: Statistics Sweden and the Riksbank.

Net sales of Swedish assets have taken place at the same time as the Swedish krona exchange rate has weakened. Foreign institutions' investments in Swedish equities and fund units are typically not hedged. Asset sales therefore involve selling kronor for foreign currency, which may be one of several factors contributing to the weakness of the krona.[18] Events related to Sweden, such as the ongoing wave of violence linked to organised crime, Koran burnings and disinformation campaigns targeting Swedish social services, have received considerable international media attention. However, they are not considered to have had any particular impact on the Swedish economy or the krona.

[18] See "The krona will strengthen in the medium term", article in *Monetary Policy Report,* September 2023, Sveriges Riksbank.

3 Household and corporate sector

The higher interest rates are leading to an increase in interest expenditure by households and companies. Most mortgagors are expected to be able to service their loans but the higher interest rates have had a clear impact on consumption. This is contributing to the squeeze on corporate profitability, albeit from a strong starting point. If consumption declines sharply, it could lead to greater profitability problems among companies and ultimately to increased loan losses for banks. Within the corporate sector, highly indebted property companies pose the greatest threat to financial stability. Many companies are now seeing their financial position deteriorate and, for some, the situation is particularly difficult. There are, however, major differences within the sector. But if interest rates rise further or remain at a higher level for a long time and economic activity slows down more than expected, more property companies may face problems. It is therefore important that companies reduce their financial risks.

3.1 Household cash flows are deteriorating but debt-servicing ability is deemed good

Demand for loans is falling as interest rates rise

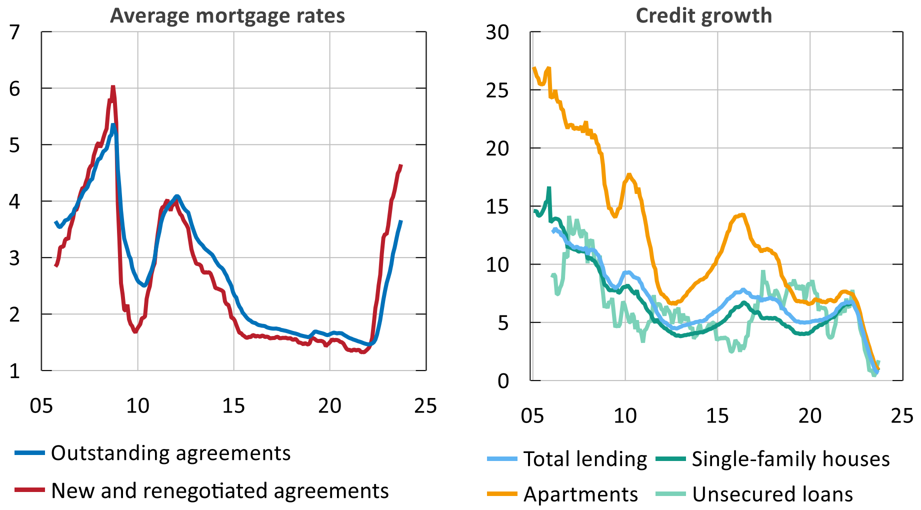
The average mortgage rate has continued to increase as the Riksbank has raised its policy rate. Since January 2022, the average interest rate on new and renegotiated mortgages has more than tripled, from around 1.4 per cent to more than 4.7 per cent in September 2023 (see Chart 7). The average rate on outstanding mortgages has risen from about 1.5 per cent to just over 3.7 per cent during the same period. Based on previous policy rate increases and the forecast for the policy rate, the Riksbank estimates that around 70 per cent of the total expected increase in mortgage rates has so far reached households.

The increase in interest rates has contributed to a decline in household demand for loans. Household debt is therefore growing much more slowly now. However, the debt-to-income ratio, meaning household debt as a percentage of disposable income, remains high from both historical and international perspectives, standing at just over 190 per cent.[19]

[19] See Chart A.4 in the Chart Appendix.

Chart 7. Mortgage rates and credit growth in Sweden

Per cent, annual percentage change



Note. The chart on the left refers to interest on loans from monetary financial institutions (MFI), housing credit institutions and alternative investment funds. The final observation refers to September 2023. The chart on the right refers to loans from MFIs expressed as an annual percentage change.

Source: Statistics Sweden.

Short interest-rate fixation periods are causing interest expenditure to rise rapidly

The high level of indebtedness, combined with the fact that a large proportion of households have short interest-rate fixation periods, means that their cash flows are sensitive to changes in interest rates. Almost 90 per cent of household loans have a remaining interest-rate fixation period of two years or less. This has meant that the rising interest rates have had a greater impact on the average interest rate in the mortgage stock in Sweden than in most other countries.

The fact that more households choose longer interest-rate fixation periods in other countries may be due to regulations that encourage households to do so.[20] Several countries have put in place measures to reduce households' sensitivity to interest rates, including by influencing their choice of interest-rate fixation period. In Sweden, on the other hand, the design of the mortgage prepayment penalty has long contributed to households having less incentive to choose longer interest-rate fixation periods, as it can be expensive for a mortgagor to cancel their loan early.

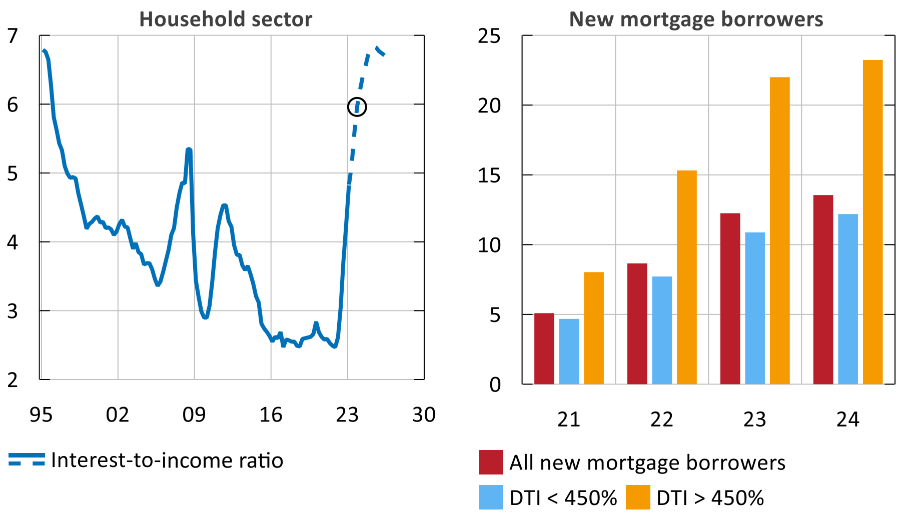
The interest-to-income ratio (interest expenditure in relation to disposable income) has risen sharply (see Chart 8). However, households without loans are also included here, which means that the average interest-to-income ratio for mortgagors is higher. For new mortgagors, who are more affected than others by rising interest rates, the

[20] See the fact box "More households choosing variable interest rates", in *Financial Stability Report* 2023:1, Sveriges Riksbank, and the fact box "The impact of monetary policy on interest-sensitive sectors in a European perspective", *Monetary Policy Report,* September 2023, Sveriges Riksbank.

figure is more than twice as high as for the household sector as a whole. To estimate how the average interest-to-income ratio for new mortgagors may develop over the next three years, the Riksbank has made projections based on the forecast for the policy rate in September and data from FI's mortgage survey from 2021. The results show a rise in the average interest-to-income ratio for all new mortgagors from just over 5 per cent to around 13.5 per cent between 2021 and 2024 (see Chart 8).

Chart 8. Interest-to-income ratio for households in Sweden

Per cent



Note. The chart on the left refers to total household interest expenditure as a percentage of disposable income. The dashed line represents the Riksbank's forecast. The calculation is based on everyone being able to use the 30 per cent tax relief on interest payments. The dot indicates an assessment of the current situation. The chart on the right shows how the interest-to-income ratio has developed over time for households that were new mortgagors (excluding those extending their existing mortgages) in Finansinspektionen's random sample from 2021.The bars show projections to December every year. The calculation of the interest-to-income ratio takes into account interest rates, amortisation, interest-rate fixation periods and wage increases. The mortgage rates are based on the Riksbank's forecast for the average mortgage rate. The interest rate on other loans is based on a standardised rate or a contractual rate, and has been adjusted upwards by the increase in the mortgage rate forecast.

Sources: Finansinspektionen and the Riksbank.

Rising interest rates also affect tenant-owner housing associations. As interest-rate fixation periods expire and associations' loans must be renegotiated, interest expenses will increase. These cost increases are typically funded through higher fees for tenant-owners (see the fact box "Higher interest rates affect tenant-owner charges").

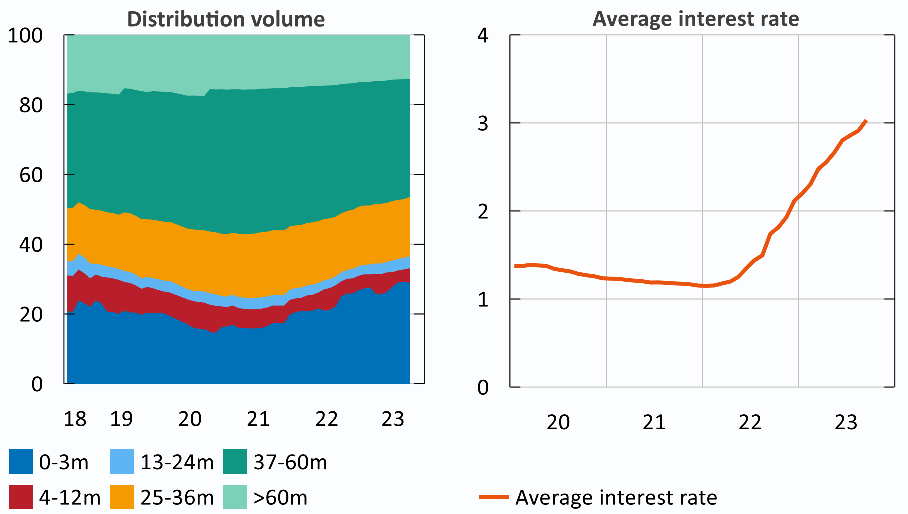
FACT BOX - Higher interest rates affect tenant-owner charges

Tenant-owner associations often have costs for their own debts that are affected by rising interest rates, which can lead to higher fees for their members. If fees increase, it affects both household cash flows and the value of the home. The average interest rate for a loan to a tenant-owner association has risen by almost two percentage points as a result of the policy rate increases, and is expected to continue to rise (see Chart 9). How the fees are affected when interest rates rise depends partly on how quickly interest-rate increases are reflected in the associations' interest expenses.

Tenant-owner associations typically have longer interest-rate fixation periods than households, but just under 40 per cent of their cumulative loan volume is tied to an interest-rate fixation period of two years or less. Since interest rates began rising, the share of the loan volume with a fixation period of up to three months has also increased to almost 30 per cent (see Chart 9). Just over a third of the total loan volume of tenant-owner housing associations still have an interest rate below or equal to 1.5 per cent.[21] The variable rate for tenant-owner associations is currently around 5 per cent, which means that the interest rate on the loans will increase by almost 4 percentage points if they choose a variable rate when the fixation period expires. This will lead to increased fees if the associations cannot reduce their expenditure accordingly.

Chart 9. Interest-rate fixation periods and interest rates among tenant-owner housing associations

Per cent



Note. The chart on the left shows the share of the contractual loan volume, where "m" stands for month. The figures in the chart have been corrected for reporting deviations in 2020-2021 using linear interpolation. The chart on the right is the average interest rate volume-weighted based on the size of the loans.

Source: The Riksbank (KRITA).

[21] See Chart A.5 in the Chart Appendix.

One can illustrate the expected increase in the monthly fee for a typical tenant-owned apartment with a simplified calculation example. The average debt per square metre for tenant-owner housing associations for new borrowers was SEK 6,100 in 2021.[22] However, there is considerable variation and highly indebted housing associations can have over SEK 15,000 per square metre in debt. For a household in a 50 square metre-sized apartment in a tenant-owner housing association with average indebtedness, an increase in the interest rate from 1.5 to 5 per cent would increase the monthly cost by almost SEK 900 per month. For a household in an association with a debt of SEK 15,000 per square metre, the increase would be SEK 2,200 per month. For a household living in a tenant-owned apartment, the median disposable income was SEK 376,500 per year. These increases in the monthly fees would reduce their disposable income by 3 and 7 per cent respectively.

Debt-servicing ability is good, but impact on consumption is uncertain

As a larger share of disposable income has to be spent on interest payments, households need to reduce other consumption and savings. So far, this has mainly been reflected in consumption, which has fallen significantly over the past year. At the same time, the labour market has been relatively resilient. This means that most households still have a working income, even if it has been weak in real terms. In addition, households have used some of the buffer savings they built up during the pandemic. Estimates suggest that households still retain some of this buffer.[23] However, this is difficult to assess due to the lack of available micro data on household assets and liabilities. But it is likely that a large share of the Swedish excess savings, as in the United States and euro area, is concentrated in households with high incomes, where the marginal propensity to consume is lower.

FI's stress tests show that the vast majority of mortgagors are expected to be able to keep up with their interest and amortisation payments.[24] The risk of payment problems is higher for consumer loans, where borrowers generally have a lower debt-servicing ability. During the first half of 2023, the number of applications for an injunction to pay at the Swedish Enforcement Authority increased by 12 per cent and the total debt amount increased by 35 per cent, compared with the same period last year. Applications for debt restructuring have also increased in the first half of 2023 compared to the same period last year. A large proportion of the loans leading to debt restructuring are various forms of consumer loan.

House prices are expected to fall slightly

The housing market has also been affected by the high inflation and interest-rate increases and, compared to the peak in February 2022, prices are more than 12 per cent lower (see Chart 10). However, the fall in prices slowed down in the second half of 2022 and prices have stabilised since the summer. Turnover in the housing market

[22] See *The Swedish mortgage market*, April 2022, Finansinspektionen.

[23] See the article *"Household savings increased significantly during the pandemic", Monetary Policy Report*, September 2023, Sveriges Riksbank.

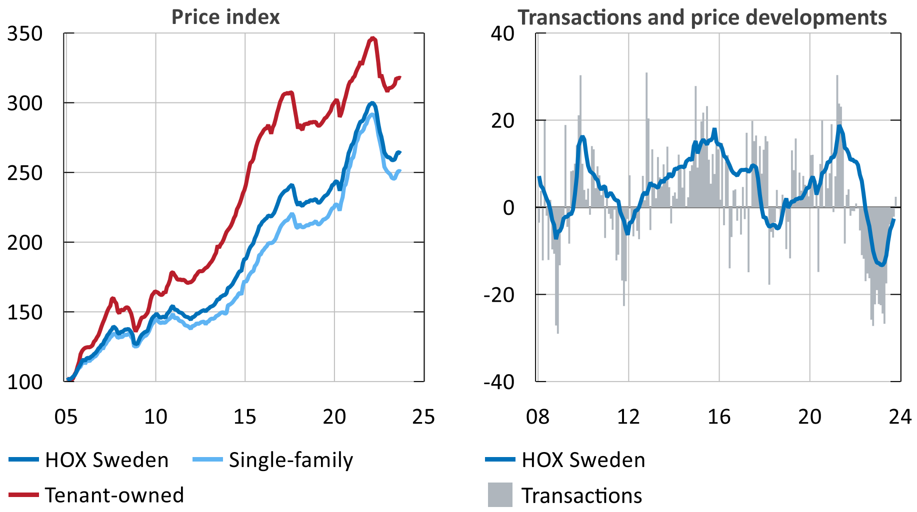
[24] See *The Swedish mortgage market*, April 2023, Finansinspektionen.

has decreased, in particular compared to during the pandemic, when turnover was significantly higher than normal. Typically, the economic situation and prevailing credit conditions are two factors that can explain the fluctuation in turnover over time.[25] The lower turnover is therefore considered to be normal given the current economic conditions.

However, it is difficult to judge how housing prices will develop going forward. If interest rates remain high for an extended period of time, there is a risk that prices will become more subdued. However, the rapid decline in residential construction and the sharp fall in residential investment since mid-2022 may help to mitigate the risk of price declines in the slightly longer term, as the inflow of new housing remains limited. The Riksbank's overall assessment is that housing prices will fall slightly further.[26]

Chart 10. Prices and turnover in the housing market

Index, 1 January 2005 = 100, annual percentage change



Note. The chart on the left shows seasonally adjusted house prices. The chart on the right shows turnover of both tenant-owned apartments and single-family houses.

Sources: Valueguard and Svensk Mäklarstatistik.

3.2 Challenging times for property companies

Subdued demand is weakening corporate profitability

Economic activity in Sweden is continuing to weaken and sentiment is now lower than normal in all sectors of the economy (see Chart 11). It is mainly consumer-oriented companies and property and housing construction companies that are under pressure, while many larger companies in business-related services and the export industry have continued to report strong results. Developments in the construction sector are also mixed. Residential construction companies are facing major challenges, while

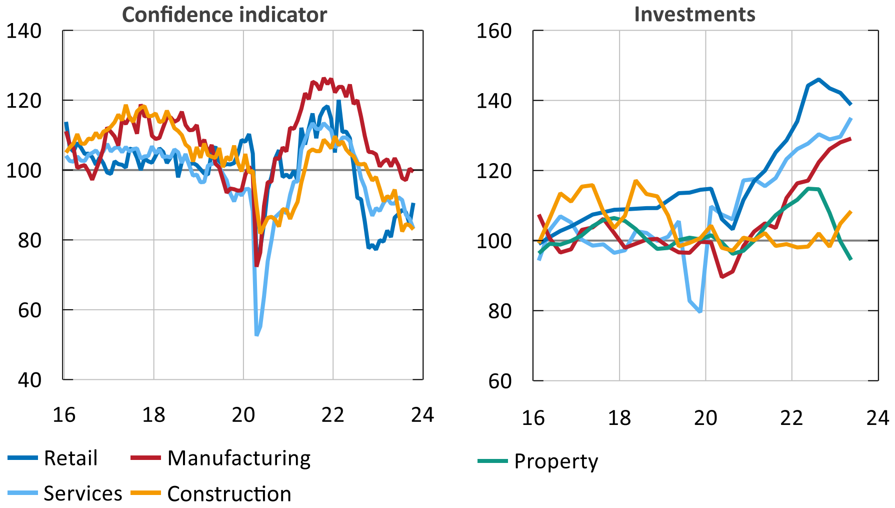
[25] See *Omsättningen på bostäder*, Insight Report No. 3, 2019, SBAB.

[26] See *Monetary Policy Report*, September 2023, Sveriges Riksbank.

demand has been stronger for construction companies that are more oriented towards civil engineering and infrastructure. Corporate profitability has been sustained by previous price increases but will soften as demand weakens and competition intensifies.[27] The number of bankruptcies has increased over the year and the bankruptcy rate is now slightly higher than normal (read more in the article "Company bankruptcies on the rise").

Chart 11. Businesses are facing lower demand

Net, index, Q1 2016 = 100



Note. The chart on the left refers to the National Institute of Economic Research's Economic Tendency Survey, seasonally adjusted and standardised data with mean value 100 and standard deviation 10. A value below 100 indicates weaker sentiment than normal. The chart on the right shows gross private investment at constant prices according to the national accounts, 6-month moving average.

Sources: National Institute of Economic Research and Statistics Sweden.

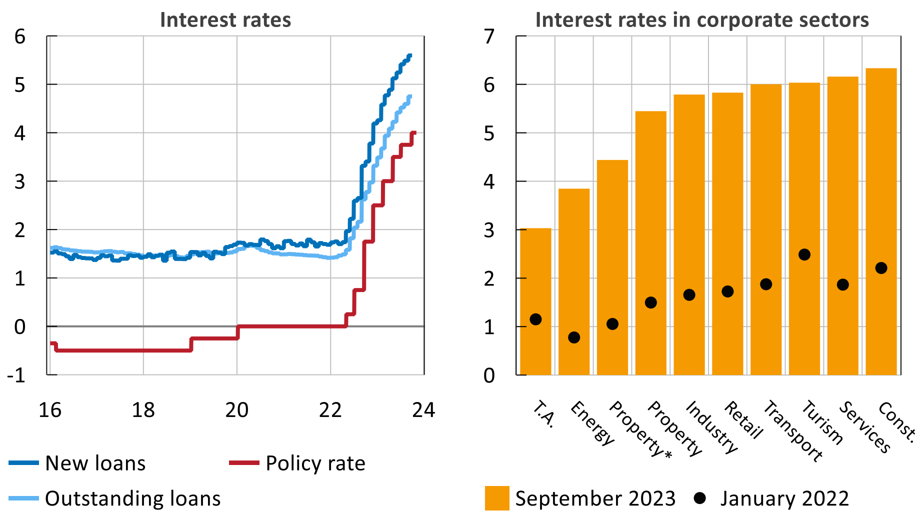
Because of the short interest-fixation period on companies' bank loans, policy rate increases have a rapid impact on corporate loan interest rates (see Chart 12). The average interest rate on new bank loans to companies has increased by just over 4 percentage points since January 2022, i.e. as much as the policy rate has been raised. The corresponding figure for outstanding bank loans was 3.4 percentage points, which is expected to rise as corporate loan interest rates are renegotiated. Interest-rate fixation periods also differ somewhat from sector to sector. Interest rates have risen less for tenant-owner housing associations, companies in the energy sector and property companies with housing, while they have risen more for companies in the services, transport and manufacturing sectors. Interest rates are generally higher for small and medium-sized enterprises than for large companies. Many larger companies also use various derivative instruments to hedge against higher interest rates. This means it takes longer for interest rate increases to affect their profit and loss accounts through

[27] See "Sharper competition putting pressure on prices", *Riksbank Business Survey,* September 2023, Sveriges Riksbank.

higher funding costs. Overall, companies' funding costs will continue to increase in the period ahead.

Chart 12. Corporate interest rates will continue to rise

Per cent



Note. The chart on the left shows volume-weighted averages of MFI's lending rates at all maturities for new and renegotiated loans. The chart on the right shows the volume-weighted average interest rate for all outstanding bank loans as at January 2022 and September 2023. Energy also refers to water. Property* refers to commercial property companies that manage rental housing and T.A. stands for tenant-owner housing associations.

Sources: Statistics Sweden and the Riksbank.

Higher interest rates softening demand for loans

The annual growth rate of corporate borrowing has gradually declined since it peaked in September 2022 and amounted to just under 4 per cent in September this year. Moreover, funding via the issuance of interest-bearing securities has decreased significantly compared with last year. The annual rate was -3.4 per cent in September (see Chart 13). This is due to the commercial property companies having reduced their issue volumes.

Total borrowing is declining broadly across sectors, with the exception of the services sector, where it continues to increase. Small companies have reduced their borrowing to a larger degree than larger companies. According to the Economic Tendency Survey, around a third of companies are finding it more difficult than usual to finance their operations. Companies cite the higher cost of bank loans as a reason, while fewer and fewer, with the exception of construction companies, cite difficulties in obtaining bank loans.[28] The ECB's bank lending survey shows a similar trend across European countries.[29] This suggests that the decline in corporate borrowing is mainly

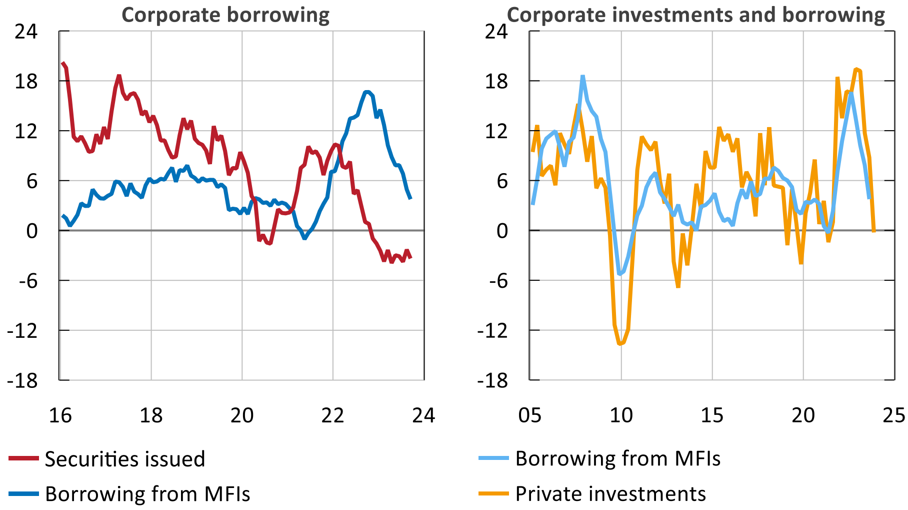
[28] See Chart A.6 in the Chart Appendix.

[29] See *The euro area bank lending survey - Third quarter of 2023*, October 2023, European Central Bank.

driven by lower demand for credit. The slowdown in investment growth suggests that corporate borrowing will decline further in the course of the year (see Chart 13).

Chart 13. Corporate borrowing continuing to slow down

Annual percentage change



Note. The chart on the left refers to MFIs' lending to non-financial companies, adjusted for reclassifications and bought and sold loans. Securities issued by non-financial companies have been adjusted for currency impact. The chart on the right refers to business sector investment at current prices, and projected forward two quarters. Refers to total outstanding loans to non-financial companies from MFIs per quarter.

Source: Statistics Sweden.

Significant differences in the squeezed property sector

Among non-financial companies, the property sector is the main potential threat to financial stability, as it accounts for almost half of banks' corporate lending. However, there are differences between different property companies in terms of capital structure, earnings capacity, focus of operations and ownership structure. Some of the companies are well placed to cope with higher interest rates, while the survival of other companies is already under threat unless they can take sufficient measures to reduce their loans. There may also be spillover effects between property companies and the markets on which they depend to finance their operations, for example if property values were to fall as a result of large property sales. The situation could then also worsen for property companies that are in a healthy financial position.

Higher rents have partly compensated for higher interest costs

Developments in the rental market have been positive in the first half of 2023 with a high demand for premises. Rental income has increased rapidly, as rents are adjusted annually in line with inflation. However, there are differences between different segments and geographical areas. For example, the rental income of property companies that predominantly manage rental housing has not increased as much.[30]

Inflation-adjusted rental agreements have contributed to improved earnings, which have partly compensated for the property companies' increased funding costs. This has minimised the negative effects on key financial indicators such as the interest coverage ratio. This has also contributed to the as yet relatively limited decline in property values, despite rising yield requirements. This means that the companies' loan-to-value ratios have not increased significantly. Since the peak in 2022, property companies have reported a decline in property values of around 5 to 10 per cent, depending on the property segment. However, in a situation where there are few transactions on the market and information about them is often limited, it is difficult to know whether the valuations of property companies are fully accurate.[31] It is likely that required rates of return will gradually continue to rise and lead to lower property values in the coming years as well.

During the autumn, property companies have continued to report relatively favourable results but there are signs that demand for premises is beginning to decline. There is considerable uncertainty about whether the strong performance of the rental market so far will continue. The risk that the economic slowdown will lead to increased vacancies and lower rental income has increased. Such a development would put further pressure on the companies' interest coverage ratios and property values.

Rising interest rates negatively impacting the key financial indicators of property companies

There is wide variation in key financial indicators among Swedish property companies. This can be shown by a sample of 34 major property companies, some of which are presently both highly leveraged and have low earnings in relation to their interest costs, i.e. a low interest coverage ratio (see Chart 14).[32] A few of these have an interest coverage ratio of less than one and may therefore find it difficult to meet their loan payments in the near term. However, as the chart shows, they have relatively

[30] The rent level for the coming year is usually set on the basis of the inflation outcome (CPI) in October of the current year, which was just under 11 per cent in 2022. Housing rents are set in local negotiations that resulted in rent increases of 4.1 per cent on average for 2023. During the autumn, Fastighetsägarna (the trade organisation for property owners), Hyresgästföreningen (Swedish Union of Tenants) and Sveriges Allmännytta (Public Housing Sweden) launched a joint guide in which their agreement from 2022 has been clarified and updated prior to the rent negotiations in 2024. See the "Trepartens vägledning guidance report: Rent negotiations 2024", September 2023, Sveriges Allmännytta (Public Housing Sweden), Fastighetsägarna (the trade organisation for property owners) and Hyresgästföreningen (Swedish Union of Tenants).

[31] Transactions in the property market act as a guide for the valuation of other similar properties. See the report Fördjupad analys om fastighetsvärdering i extern redovisning (In-depth analysis of property valuation in external accounting), June 2023, Bo Nordlund Real Estate Consulting AB (prepared on behalf of Finansinspektionen).

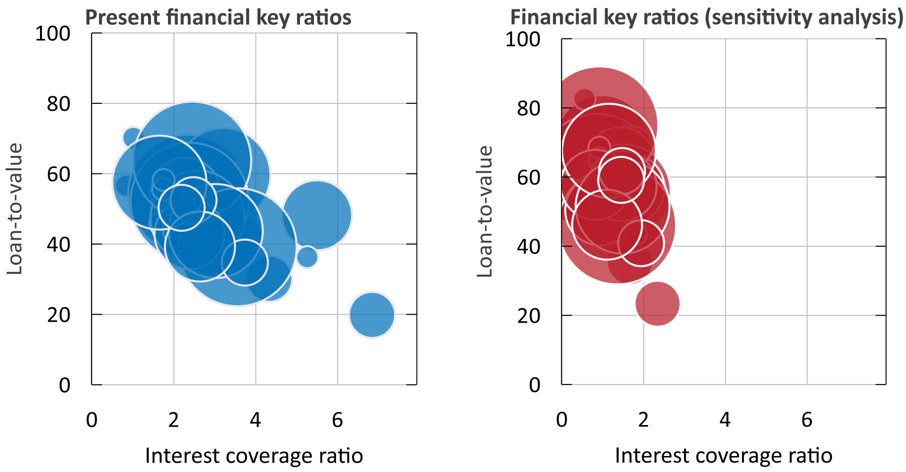
[32] The selection of 34 companies is based on the availability of data and has been made in order to depict different segments and business models in the property sector.

small loans compared to other property companies. But there are also larger borrowers with relatively low interest coverage ratios that are therefore sensitive to both rising interest rates and lower rental income.

The vulnerability of property companies can be clearly illustrated in a simple sensitivity analysis where we assume that property values fall by a further 15 per cent and the property companies' total loans are renewed in one go at today's interest rate levels of 6 per cent. Under these conditions, the companies' key financial indicators weaken considerably and around 40 per cent of property companies would have an interest coverage ratio of less than one, which means that they would not be able to meet their commitments to their lenders based on current earnings (see Chart 14).

Chart 14. Wide range of key financial indicators

Per cent



Note. Refers to a sample of major property companies as of the second quarter of 2023. The loan-to-value ratio is defined as the ratio of total interest-bearing liabilities to total assets and the interest coverage ratio is defined as the ratio of operating income to interest expense. The interest coverage ratio is expressed on a rolling 12-month basis. The size of the bubbles reflects the size of the companies' total interest-bearing liabilities. The chart on the right shows the loan-to-value ratio if property values fall by 15 per cent from the valuation made in Q2 2023. The interest coverage ratio is calculated with an assumption that all companies have an average funding cost of 6 per cent, given operating profit and interest-bearing liabilities as of Q2 2023.

Sources: Sedis and the Riksbank.

Key indicators are deteriorating gradually

Contrary to what is assumed in the above scenario, property companies are in practice gradually affected by higher interest rates as their loans and interest derivatives mature. For the same sample of property companies, the average volume-weighted interest rate has risen from around 1.5 per cent in early 2022 to 3.5 per cent in the third quarter of this year. This means that less than half of the policy rate increases have been reflected in the profit and loss accounts of property companies. However, the interest rate varies between the property companies in the sample, ranging from

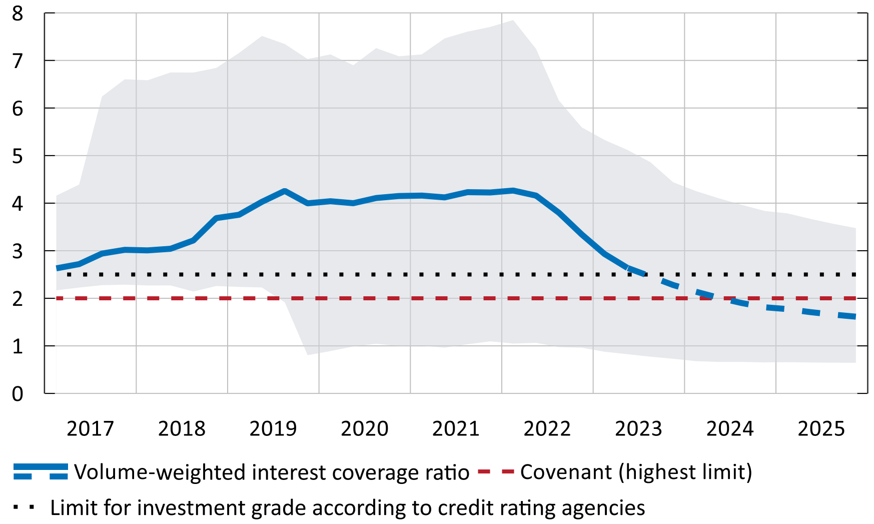
2 per cent to 6.3 per cent. Overall, funding costs will continue to rise for many of the property companies going forward.

To illustrate the inertia in how higher interest rate levels affect property companies' key financial indicators, the Riksbank has estimated how their interest coverage ratio may develop in the future (see Chart 15). In the calculations, the policy rate is assumed to develop in accordance with the Riksbank's forecast and the impact of market rates on the property companies' interest expenses is assumed to be the same as in 2022.[33] The operating profit is assumed to stay constant at the same level as the last available outcome throughout 2023, and thereafter increase by 2 per cent per year. This means that we assume that property companies cannot fully raise rents in line with inflation next year as economic activity will weaken.

The projections show that the average interest coverage ratio falls from 2.4 in the third quarter of this year to 1.8 at the end of 2024 (see Chart 15). The grey range shows a large spread between individual companies. Most property companies still have sufficient cash flows to pay their interest costs next year. By contrast, almost 40 per cent of property companies risk having an interest coverage ratio below 1.5 at the end of 2024. This would mean breaking the financial conditions that banks and some bond investors have in their loan agreements. This may contribute to increased costs for both new and some existing loans, and also affect their ability to refinance future loan maturities.

[33] See *Monetary Policy Report*, September 2023, Sveriges Riksbank.

Chart 15. Property companies' key indicators deteriorating gradually
Ratio



Note. Refers to a sample of property companies, where some companies are added over time. Data is available until 2023 Q2 for 11 of the companies and until 2023 Q3 for the rest of the companies. The interest coverage ratio is volume-weighted and expressed on a rolling 12-month basis. The dashed blue line refers to how the interest coverage ratio may develop according to the Riksbank's calculations. The grey area shows the interval between the lowest ICR value and the 95th percentile among the property companies included.

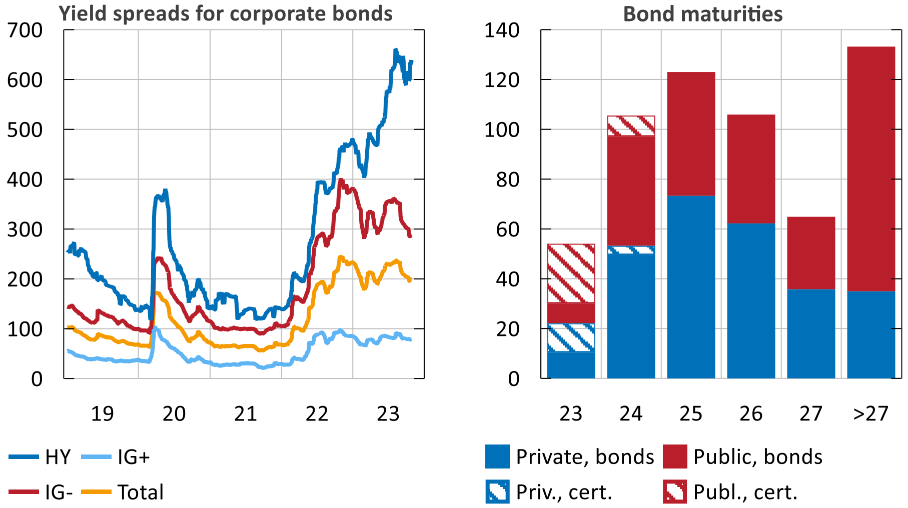
Sources: Sedis and the Riksbank.

Large bond maturities pose continued refinancing risks

Property companies have large bond maturities that need to be refinanced – around SEK 20 billion this year and a further SEK 100 billion each year for the next five years (see Chart 16). Over the past year, refinancing has mainly been a problem for private property companies with a credit rating of BBB (or lower) that have faced interest rate levels that have not been attractive or sustainable. These companies also account for a large share of the bond maturities in the coming years. At the end of the summer, however, there were several small bond issues in Swedish kronor from BBB-rated property companies, at significantly lower interest rates than had been possible in the past year.

To refinance their bond maturities, property companies have also had to take out bank loans, mainly from Nordic banks. Borrowing by property companies from Swedish banks has continued to increase in the first half of 2023, by around SEK 11 billion. This is a much slower pace than in the corresponding period last year, when the banks' net lending increased by SEK 70 billion. This is partly because investment and property acquisitions have generally shrunk, which has reduced the borrowing needs of property companies. But banks have also become more selective in their lending to property companies and have tightened their financing conditions.

Chart 16. Property companies' interest rate spreads and maturities of securities
Basis points above swap rates, SEK billion



Note. The chart on the left refers to interest rate spreads for property company bonds to 30 October 2023. Investment Grade+ (IG+) includes companies with the highest credit rating, AAA to A- inclusive. Investment Grade- (IG-) includes BBB+ to BBB-. High Yield (HY) includes companies with credit ratings lower than BBB-. Refers to maturities of the property companies' commercial paper and bonds as of September 2023.

Sources: Bloomberg and the Riksbank (SVDB).

Property companies must continue to take action

So far, the squeezed property companies have coped with the challenges through a combination of measures such as property sales, paused dividend payments, lower investment, share issues, adjusted bond conditions and increased loans from Nordic banks. Strong operating profits have also helped the situation. Even if these measures have given companies more time to address their problems, more needs to be done. If interest rates increase further or remain high for a long time and economic activity slows down even more, their financial position will continue to deteriorate. If the economic downturn is more substantial and more prolonged than expected, there is also a risk of a decline in demand for premises, higher vacancies and lower rent levels. In such a scenario, property companies may have to make even larger sales, resulting in rapidly falling property values. This in turn could have spillover effects between companies and markets. It is therefore important that the property companies carry out and expand the measures they have begun to strengthen their balance sheets and reduce their financial risk-taking.

4 The Swedish financial system

Overall, the Swedish financial system is working well. This includes the infrastructure systems in which payments and transactions with financial instruments are made. However, the payment infrastructure is facing major changes. The major Swedish banks have a favourable initial position in the form of stable earning capacity, low loan losses and relatively high capital levels. The Riksbank's earlier stress tests and new calculations indicate that the banks have sufficient capital to deal with a worsened economic outlook, as well as a scenario with significant problems in the property sector. However, in such a scenario, confidence in the banking system and therefore banks' funding conditions could deteriorate, which may affect their ability and willingness to supply credit. The calculations do not take into account such confidence effects. The behaviour of non-bank financial institutions can amplify disruptions in key financial markets. For example, corporate bond funds are vulnerable to sudden redemptions. In a stressful environment, this can contribute to impaired funding conditions for companies.

4.1 Good resilience in the major Swedish banks

The major Swedish banks' initial position remains favourable

The major Swedish banks have a high level of profitability that also stands up well in a European comparison.[34] They also have capital ratios well above the regulatory requirements as well as the banks' own internal target levels corresponding to 1-3 percentage points above the requirements.[35] Profitability is mainly driven by net interest income, which currently accounts for around two-thirds of the major Swedish banks' total income (see Chart 17 and the fact box "Net interest income of major Swedish banks in comparison with the rest of Europe").[36]

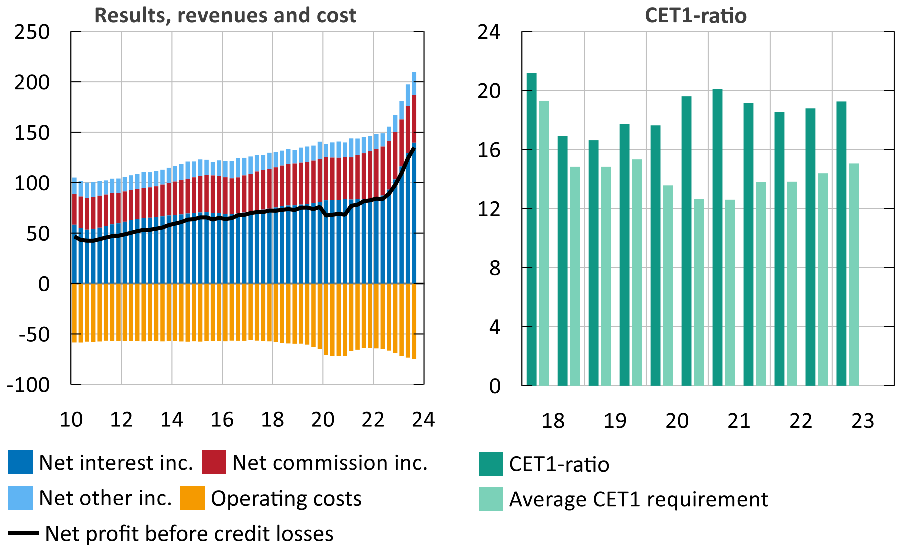
[34] The major Swedish banks are Handelsbanken, SEB and Swedbank.

[35] Based on the EBA Risk Dashboard, Swedish banks had a return on equity of 15.7 per cent in Q2 2023, compared with 10.8 per cent for European banks on average. See Chart A.7 in the Chart Appendix for the major Swedish banks' return on equity.

[36] Net interest income is the difference between revenue from interest-bearing assets and expenses from interest-bearing liabilities.

Chart 17. Composition of operating profit and CET1 ratio compared to requirements

SEK billion, per cent



Note. Quarterly data in which the final observation refers to Q3 2023. Data refer to Handelsbanken, SEB and Swedbank. The chart on the left refers to data rolled over four quarters. The chart on the right refers to the unweighted average CET1 capital requirement.

Sources: The banks' quarterly reports and Finansinspektionen.

The increase in net interest income is due to the fact that the interest rates on banks' assets have increased more than those on their liabilities. In Table 1, the volume-weighted interest rate on the liabilities and assets over time is estimated, and the table shows that the interest rate on the assets has increased approximately 0.3 percentage points more than on the liabilities. For example, the banks have been able to reduce their funding costs on the liability side by not raising deposit rates to the public in line with policy rate increases. As shown in Table 1, deposit rates increased by only 2.1 percentage points between December 2021 and August 2023, while the policy rate increased by 3.75 percentage points over the same period. In addition, banks do not pay interest on equity, which has a greater impact on net interest income the further the policy rate is from 0 per cent. On the asset side, the banks have increased lending rates more in line with policy rate increases, from 1.7 per cent in December 2021 to 4.3 per cent in August 2023.

Table 1. Balance sheets of Swedish monetary financial institutions

Estimated interest rates on outstanding stocks

Balance sheet item	Amount (SEK billion)	Dec 21 (per cent)	Aug 23 (per cent)	Change (percentage points)
Cash and central bank assets	1,562	-0.2%	3.6%	3.8
Bonds	2,036	0.4%	3.8%	3.4
Lending	10,792	1.7%	4.3%	2.6
Other	6,230	-	-	-
Total assets	**20,621**	**1.0**	**3.6%**	**2.6**
Wholesale funding	6,061	0.5%	3.1%	2.6
Deposits	6,797	0.0%	2.1%	2.1
Other	6,867	-	-	-
Equity	895	0.0%	0.0%	0.0
Total liabilities and equity	**20,621**	**0.2%**	**2.4**	**2.3**

Note. The rates for total assets and liabilities and equity are volume weighted. Volume weighting also takes into account interest-bearing lending to and deposits from other MFIs, which are included in the 'Other' categories. Amounts refer to August 2023. Lending and deposits refer to households and non-financial companies.

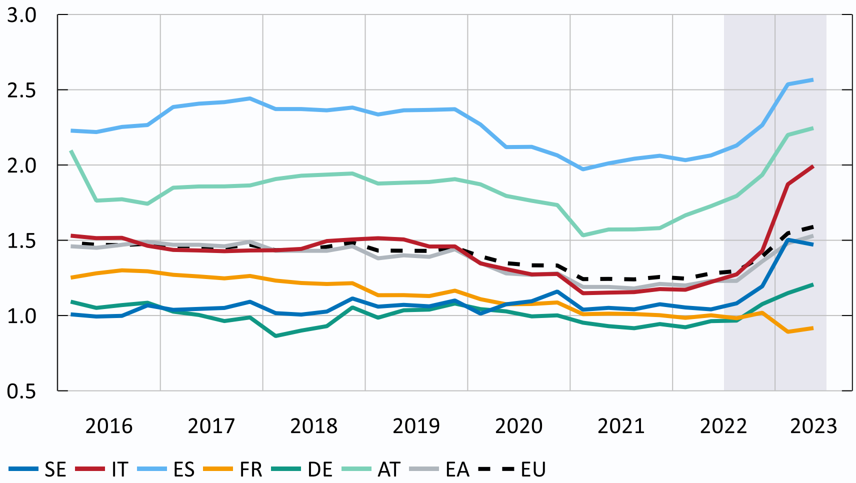
Sources: Statistics Sweden and the Riksbank.

FACT BOX - Net interest income of major Swedish banks in comparison with the rest of Europe

Net interest income has not only increased in Sweden. In relation to interest-bearing assets, the so-called net interest income margin has developed in a similar way in several European countries since interest rates started to rise in the first half of 2022 (see Chart 18).[37] The main reason for this development is that the banks have not raised interest rates on their customers' accounts as quickly as they have raised interest rates on loans.

Chart 18. Net interest margin for EU countries

Per cent



Note. SE: Sweden, IT: Italy, ES: Spain, FR: France, DE: Germany, AT: Austria, EA: Euro area and EU: European Union (average). For the euro area, the series is shown for significant institutions in countries participating in the Single Supervisory Mechanism (SSM).

Sources: EBA Risk Dashboard and the ECB.

Compared with the average change for banks in the euro area and the EU, the net interest margin of Swedish banks has increased at a faster pace. This is largely due to the fact that Swedish households and companies have comparatively short interest-rate fixation periods on their loans, meaning that the banks can pass on policy rate changes more quickly. The pass-through to the average lending rate for Swedish households and companies has so far been 67 per cent since the first policy rate increase in May 2022. The corresponding figure in the euro area is 35 per cent.[38]

[37] The net interest income margin is defined as the ratio of net interest income to interest-bearing assets.

[38] In the month before the current policy rate increase cycle, the average interest rate for both households and companies on outstanding stock was 1.74 per cent in Sweden (April 2022) and 1.97 per cent in the euro area (July 2022). In August 2023, the corresponding figures were 4.24 per cent in Sweden and 3.28 per cent in the euro area.

Looking instead at the impact of policy rate rises on deposit rates, this has been smaller for both Swedish and European banks (see Chart 19). Swedish banks have transferred 47 per cent of the increases to households' on-demand deposit accounts, which represent the largest share of their deposits. In the euro area, between 7 and 25 per cent has been transferred so far.[39] This difference in impact does not stand out historically. In both the current and previous cycles of interest rate increases, there has been a higher pass-through to deposit rates in Sweden than in the euro area.

The extent to which deposit rates increase appears to be determined by how long policy rates remain at higher levels. We can see in the chart below that the longest cycle of interest rate rises (starting in the years 2005 and 2006) had a greater impact than the shorter cycles. The Riksbank's forecast for the policy rate indicates that we have probably not yet seen the full impact of the current cycle.

Chart 19. Pass-through of policy rate increases to on-demand deposit rates

Per cent

Note. The charts show the impact of policy rate increases on household and corporate deposits held in accounts without contracts (also known as untied deposits) broken down by which year the policy rate increase cycle began. For Sweden, this refers to deposits in on-demand deposit accounts, i.e. deposits in accounts with no agreed maturity, period of notice or significant restrictions on the terms of withdrawal. Household deposits in the euro area include both overnight deposits (salary accounts) and redeemable deposits, which are deposits that are withdrawable but with certain restrictions and that have a maturity of less than three months. For corporate deposits in the euro area, only salary accounts are considered. The length of the policy rate increase cycle for Sweden (euro area) starting in 2006 (2005) was 33 (35) months, 2010 (2011) was 17 (7) months. The current cycle started on 5 May 2022 (27 July 2022) and lasted 14 (12) months until 31 August 2023. See also Chart A.8 in the Chart Appendix, which shows the corresponding picture for tied deposits.

Sources: ECB, Statistics Sweden and the Riksbank.

[39] The Swedish household account types are not perfectly comparable with the account types in the euro area, as the ECB does not keep statistics for on-demand deposit accounts, for instance. In Chart 19, household overnight deposit accounts are merged with accounts where deposits have some restrictions, but fewer restrictions than traditional savings accounts. The range thus represents the impact on overnight deposit accounts (7 per cent), and accounts with withdrawable deposits (25 per cent). The interest rate for a similar on-demand deposit account variant in the euro area should be somewhere in between.

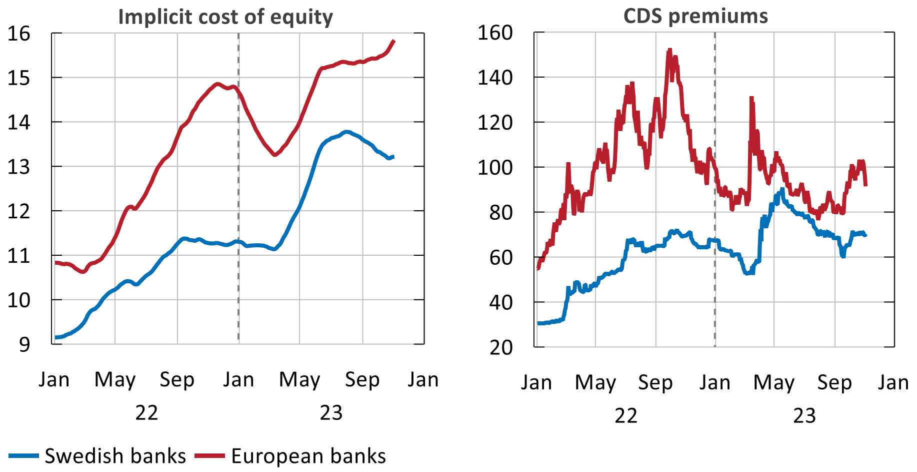
Investors have adjusted their view of the major Swedish banks

Investors have a more favourable view of the major Swedish banks than banks in the rest of Europe, as illustrated by several different measures (see Chart 20). However, since the beginning of the year, investors have become somewhat more pessimistic about the major Swedish banks, despite their high levels of profitability. The fact that investors consider the risks to have increased slightly more in major Swedish banks than in banks in the rest of Europe differs from previous turbulent periods, where the trend has been the opposite.

For the major Swedish banks, the implicit cost of equity remains lower than for banks in the rest of Europe, but the difference has narrowed somewhat since the beginning of the year (see Chart 20). At the beginning of the year, CDS premiums also increased more for the major Swedish banks than for other banks in Europe, although this movement has recently reversed (see Chart 20).[40] The fact that investors have adjusted their view of the major Swedish banks somewhat can partly be explained by the banks' exposures to commercial property. Banks with higher exposures to property have performed less well than the sector as a whole over the past year.

Chart 20. Implicit cost of equity and CDS premiums for the major Swedish banks and banks in the rest of Europe

Per cent, basis points



Note. The Swedish banks are Handelsbanken, SEB and Swedbank. European banks refers to banks included in Eurostoxx, which is an index of bank stocks in the euro area. The dotted line shows the first weekday of January 2023. The chart on the left shows the quarterly rolling average of implicit cost of equity, calculated with market prices as a basis. The chart on the right shows CDS premiums for senior bonds, 5 years.

Sources: Bloomberg, S&P Capital IQ and the Riksbank.

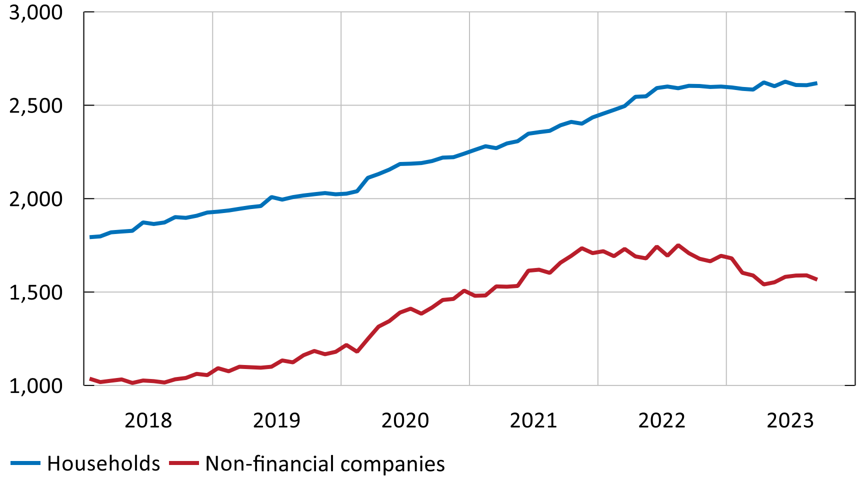
[40] CDS is short for Credit Default Swap, which is a contract between credit market participants that aims to transfer the credit risk of an underlying asset from one participant to another.

Reduced deposits are leading to higher funding costs

There are many indications that the banks' profitability will deteriorate. In particular, deposits are expected to become more costly owing to both volume and price effects. Deposit volumes in the banking system have also begun to decline over the past year (see Chart 21). This is probably driven by interest rate differentials where depositors invest in other instruments with higher interest rates than deposits, but also by reduced credit growth and the Riksbank gradually selling off its bond holdings.

As a result of declining deposits, the banks have to compete more for deposits, which drives up funding costs. The fact that depositors are shifting their deposits between different types of banks to a slightly higher degree to obtain a higher interest rate is contributing to this (see the article "Flightiness of deposits varies across Swedish banks"). In addition, they are increasingly choosing to fix their deposits, which further increases costs for the banks. As an illustration of rising deposit costs, the pass-through of policy rate increases to deposit rates increased from 40 per cent in January to around 50 per cent in September.[41]

Chart 21. Deposits from Swedish households and non-financial companies in MFIs
SEK billion



Note. Data to end of September 2023.

Source: Statistics Sweden.

To get an idea of how the major Swedish banks' net interest income is affected in a scenario where deposit rates are rising rapidly, the Riksbank has carried out some simple calculations. In a scenario where the pass-through from the policy rate rises to 80 per cent instead of the current 50 per cent, and where the share of deposits in savings accounts increases from the current 21 per cent to 35 per cent, their net interest income would, all else equal, decrease by 11 per cent. This corresponds to around SEK 15 billion for the major Swedish banks.

[41] The figures refer to the pass-through of bank deposit rates on new contracts (all accounts) to non-financial companies and households.

The banks have good liquidity

The major Swedish banks meet by some margin the requirements for liquidity buffers (LCR) in all currencies and in individual significant currencies, as well as the requirement for net stable funding (NSFR).[42] Even according to the Riksbank's supplementary measure, which also takes into account the liquidity risk during the thirty-day period similar to the LCR measure, the major Swedish banks currently have good liquidity.[43]

The central banks' asset purchases, which were expanded during the pandemic, have been financed by giving banks a claim on the central bank. The major banks' liquid assets, in the form of central bank deposits, have thus increased and are one of the explanations for their favourable liquidity situation today. Now that central banks are tightening (quantitative tightening) and selling off their bond holdings, the reverse is happening. The banks' liquid assets are decreasing, at the same time as their deposits are decreasing because the counterparty in the central bank's sale generally has to withdraw bank deposits to buy the asset from the central bank. This in turn means that the banks need to extend the maturity on the funding to maintain a favourable liquidity situation and satisfactory levels relative to existing liquidity requirements. This may not be a problem for banks per se, but it means that their costs for maintaining liquidity will increase in the future.[44]

Low loan losses but some signs of deteriorating credit quality

The loan losses of the major Swedish banks remain low. However, the proportion of loans with a higher credit risk has increased over the past six months. Under IFRS 9, loans are classified into three risk classes: stage one (performing) is for loans that have not shown any signs of increased credit risk, stage two (under-performing) is for loans with increased credit risk, and stage three (non-performing) is the highest risk class for loans.[45] However, how banks classify loans and have reserves for loan losses differs from one bank to another. The classifications and loan loss models used by banks are based on their own calculations and assumptions about, for example, various macroeconomic factors such as GDP and unemployment, as well as their own criteria for moving between the different stages.

Moving loans from stage one to stage two can be seen as an early sign of deteriorating credit quality. The increased proportion of loans in stage two can be observed both for the major Swedish banks and for other bank types such as mortgage banks

[42] The LCR illustrates the banks' capacity to cover their stressed net outflows for 30 days and the NSFR illustrates their capacity to hold a certain level of stable funding in relation to their illiquid assets in the slightly longer run. At the end of Q2 2023, the LCR and NSFR averaged 154 per cent and 117 per cent respectively for the major Swedish banks.

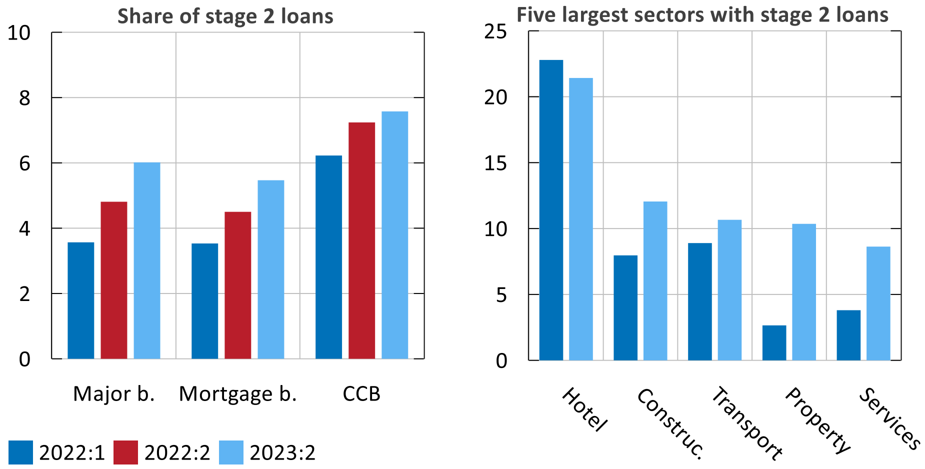
[43] See T. Lindqvist and E. Olausson (2023), "An adjusted liquidity coverage ratio that takes greater account of maturity matching", *Economic Commentaries* No. 1, Sveriges Riksbank.

[44] See, for example, S&P Global Ratings, "European Banks: Protecting Liquidity Will Come At An Increasing Cost", 29 June 2023.

[45] IFRS 9 (International Financial Reporting Standard 9), which is the accounting standard that Swedish banks have been required to use to value loans and financial instruments since January 2018.

and consumer credit banks (see Chart 22).[46] However, the proportion of loans in stage three has remained largely unchanged.[47]

Chart 22. Share of stage two loans and the five largest sectors with stage two loans
Per cent



Note. Based on data for 17 Swedish banks that are divided into different categories: major banks, mortgage banks and consumer credit banks (CCB). Stage 2 loans are under-performing loans where a significant increase in credit risk has occurred. The 'Hotels' sector also includes travel and leisure. The 'Property' sector includes housing (not tenant-owner housing associations), offices and premises. The 'Services' sector also includes others.

Sources: The banks' quarterly reports, S&P Capital IQ and the Riksbank (KRITA).

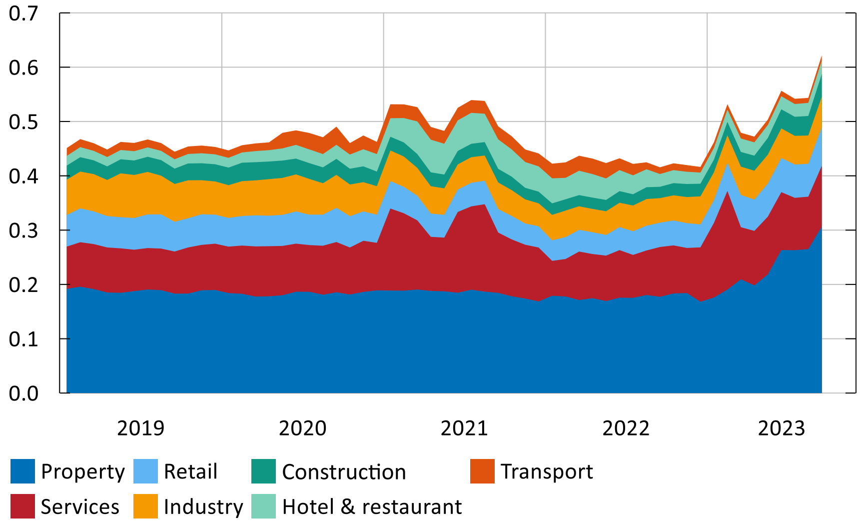
An analysis of bank lending to Swedish companies indicates that the largest increase in the proportion of stage two loans over the past year has been in the property sector (see Chart 22). The poorer credit quality is also reflected in that some property companies have had their credit ratings downgraded over the past year. The change in the banks' view of credit risk in the property sector is reflected in the banks' estimates of the probability of default in different sectors. The increase is most evident in the construction sector and commercial properties with rental housing in their portfolios. If the size of the loans is also taken into account, the risk of major credit losses is mainly in the property sector (see Chart 23).

[46] The classification in Chart 22 is based on FI's Bank Barometer report. See *Bank Barometer*, March 2023, Finansinspektionen.

[47] For the major Swedish banks, the proportion of loans in stage three remained unchanged at 0.3 per cent at the end of Q2.

Chart 23. Banks see increased risks in their lending to companies

Per cent



Note. Loans at risk of default as a percentage of total loans to non-financial companies. Loans at risk of default are calculated as the banks' estimated probability of default (PD) multiplied by the respective loan in SEK billion, aggregated across sectors.

Source: The Riksbank (KRITA).

The banks have capital to deal with significant losses

The Riksbank's previous stress tests of the banks' exposures to Swedish companies indicate that loan losses on corporate lending could be high in a scenario in which macroeconomic developments are considerably weaker than in the Riksbank's forecast but that the banks would be able to manage such losses.[48] As many property companies are facing a challenging financial situation, the Riksbank has carried out a number of sensitivity analyses of the size of losses that could arise in the event of major problems in the sector (see the fact box "Calculation of provisions for loans to commercial property companies").

The calculations show loan losses of up to 3 per cent of lending to commercial property companies. Although profitability is expected to decline going forward, the banks are deemed to have sufficiently strong resilience to cope with such loan losses. However, confidence in the banking system could be affected and lead to a deterioration in banks' funding conditions, as investors are likely to become more cautious. This, in turn, could lead to a credit crunch from the banks, thus further negatively affecting the financing possibilities of property companies. The calculations do not take into account such confidence effects.

[48] In spring 2023, when the Riksbank carried out a stress test of the Swedish banks' lending to Swedish non-financial companies, including commercial property companies, its calculations showed that the Swedish banks could make losses of just under three per cent of their lending to Swedish companies (or just over SEK 60 billion over three years). See the fact box "Stress test of banks' lending to non-financial companies", in *Financial Stability Report* 2023:1, Sveriges Riksbank,

FACT BOX – Calculation of provisions for loans to commercial property companies

To get a clearer idea of how the banks would be affected if the property companies' financial situation were to deteriorate, the Riksbank has made certain calculations. These are based on a number of assumptions and simplifications and should not be seen as forecasts, but rather as sensitivity analyses. The calculations show how the banks' provisions for loan losses could be affected if the probability of default (PD) were to increase 2, 3 or 4 times for each individual loan with property as collateral. This means that a loan with a PD of 1 per cent increases to 2, 3 or 4 per cent. A quadrupling of PD may seem like a big change, but if you compare, for example, PD before and during the pandemic in the hospitality sector, it increased around 3.5 times.

Subsequently, it can be assumed that the increase in PD leads to an increase in the share of loans in the higher risk classes 2 and 3. An assumption is made in the calculation that any movement between the different risk classes depends on the initial PD level and that a larger change is required for loans with a low initial PD than for loans with a higher initial PD to move between the different steps (see Table 2).

Table 2. Criteria for migration between different risk classes

Initial PD	Migration to stage 2 if:	Migration to stage 3 if:
<0.1%	PD change>=400% and PD<100%.	PD=100%
0.1%-0.5%	PD change>=200% and PD<100%.	PD=100%
0.5%-2%	PD change>=100% and PD<100%.	PD=100%
>2% but <100%	PD change>=50% and PD<100%.	PD=100%

Source: The Riksbank

Depending on the risk class of a loan, the banks make different provisions. If the loan is in a high risk class, the banks reserve a larger proportion of the loan amount than if it is in a low risk class. Here, we have assumed the following provision ratios for the different risk classes:

- 0.1 per cent of the loan amount in stage 1
- 2.5 or 5 per cent of the loan amount in stage 2
- 50 per cent of the loan amount in stage 3

The assumptions for the provisioning ratios in the different risk classes are higher than those used when Finansinspektionen conducted a stress test of banks' lending to property companies, but at the same time they are somewhat lower than what some of the major Swedish banks have reported.[49].

[49] See T. Aranki, C. Lönnbark and V. Thell, "Stress test of banks' lending to property companies", *FI Analysis* 24, November 2020, Finansinspektionen.

The Riksbank's KRITA database contains a total of around SEK 1,200 billion in loans to property companies. Based on these loans and the above assumptions, banks' loan loss provisions would amount to 0.6 per cent and 1.5 per cent of loans, depending on whether the PD increases 2 and 4 times, respectively. If, instead, the provision ratio in stage 2 is 5 per cent, the range of the loan loss level increases to between 1.3 and 3 per cent. This would give rise to loan loss provisions in the magnitude of SEK 8-38 billion.

Another way of calculating loan loss provisions is to make an assumption concerning the interest coverage and loan-to-value ratios at which the property companies' loans would move to a higher stage in the risk classification. Based on the property companies' interest expenditure and loan-to-value ratios, it is possible to calculate the size of the banks' loan loss provisions were the interest rates faced by the companies to increase and the values of their property portfolios to fall. The calculations are based on the 34 property companies included in Chart 14, which corresponds in total to around SEK 320 billion in loans with Swedish banks, and reflects a situation in which they initially pay an interest rate that fully reflects the changes in the policy rate and where the companies' interest rates also rise by a further 4 percentage points. At the same time, property values are assumed to fall by 30 per cent. Here, it is assumed that all loans are initially in stage 1 and that they move to the other stages according to the same method that Finansinspektionen has used.[50]

- stage 2 if the interest coverage ratio is below 1 and the loan-to-value ratio is between 70 and 100 per cent,
- stage 3 if the interest coverage ratio is below 1 and the loan-to-value ratio is above 100 per cent.

Given these assumptions, in such a situation, the banks would need to increase loan loss provisions by around SEK 7 billion, corresponding to a loan loss level of 2.2 per cent. With this method, the size of the price fall becomes important and, if prices fall by more than 30 per cent, the loan losses are much larger. Since these calculations are based on a sample of property companies, only around SEK 320 billion of the Swedish banks' lending to commercial property companies is included, which is less than in the previous calculation, where SEK 1,200 billion of the banks' lending was included. In addition, a large part of the Swedish banks' property exposures consist of loans to smaller property companies, and it may be the case that they have on average a somewhat poorer financial starting position than those included in this calculation. This means that the provisions in SEK are not comparable with the previous example.

[50] See the previous footnote.

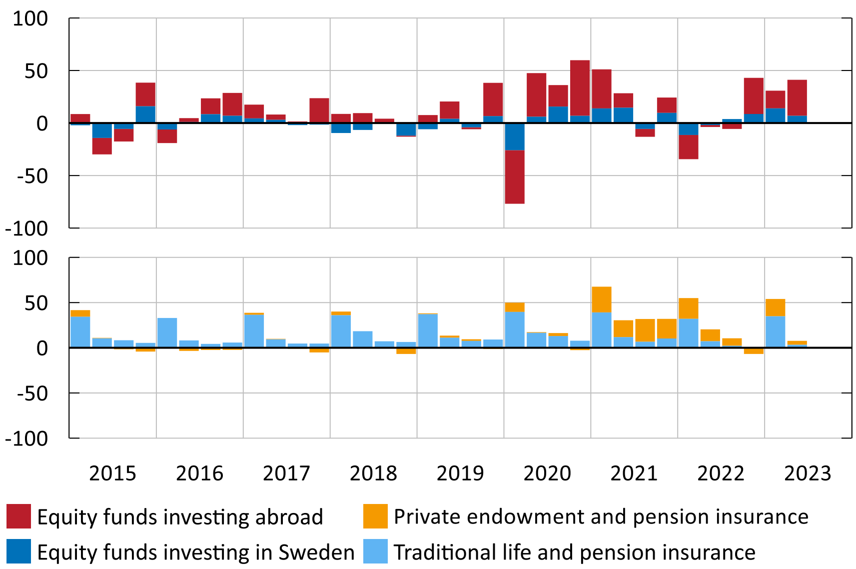
4.2 Other financial institutions still vulnerable in the event of market turbulence

Capital flows to and from abroad may affect the krona

Sweden has long had a surplus on its financial savings, a significant part of which is channelled abroad through investment funds and insurance and pension companies. This is reflected, among other things, in the fact that equity funds investing abroad have for several years had larger net inflows than corresponding funds investing in Sweden.[51] Net premiums to Swedish insurance and pension companies have also been high (see Chart 24), which the companies largely invest in foreign equity that they do not hedge against movements in the exchange rate.[52] Since the savings lead to an outflow of capital from Sweden, which means a need to sell kronor, it can contribute to a weakening of the Swedish krona. At the same time, the recent depreciation of the krona exchange rate has been favourable to the savers, as the value of foreign assets has risen in krona terms. But the trend will be the opposite if the krona strengthens.

Chart 24. Net flows to Swedish equity funds and net premiums to Swedish life and pension insurance policies

SEK billion



Note. Net flows are the difference between deposits and withdrawals from the funds and net premiums are the difference between premiums paid and claims paid. Net flows include foreign-registered funds from the member companies of the Swedish Investment Fund Association.

Sources: The Swedish Investment Fund Association and Insurance Sweden.

[51] The statistics include fund units sold in Sweden by the Swedish Investment Fund Association's member companies, but the funds may be registered in Sweden or abroad.

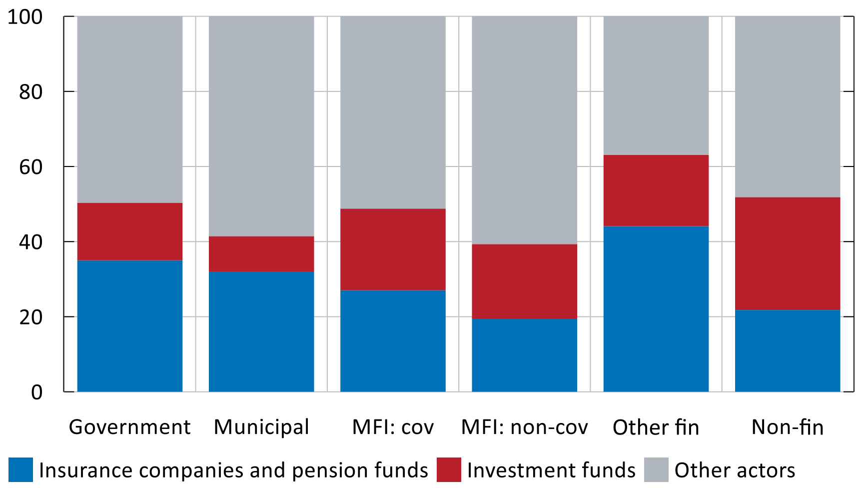
[52] See Chart A.9 in the Chart Appendix.

Other financial institutions can amplify disruptions in key funding markets

By virtue of their role as managers of savings, institutions such as investment funds and insurance and pension companies are major owners of financial assets, both in Sweden and abroad.[53] In smaller markets, such as the Swedish market, these institutions often have a dominant position (see Chart 25).[54] This means that their behaviour can affect markets and exacerbate stress in the financial system. This may include, for example, having to quickly dispose of different types of assets in key funding markets.

Chart 25. Other financial institutions' share of interest-bearing securities in SEK

Per cent



Note. The total refers to the nominal value of outstanding securities as at 30 June 2023, excluding the Riksbank's holdings. "MFI: cov" and "MFIs: non-cov" refer to covered and non-covered debt securities issued by monetary financial institutions (MFIs). "Other fin" are financial companies other than MFIs, insurance and pension funds and investment funds. Interest-bearing securities from non-financial companies are also normally referred to as corporate debt securities.

Sources: Statistics Sweden and the Riksbank.

For example, insurance and pension companies use interest rate swaps to reduce their interest rate risk, in so far as the agreement stipulates a fixed interest rate but they pay a floating rate. The size of the interest rate swaps corresponds to around SEK 185 billion.[55] In a situation where interest rates rise sharply, interest rate swaps fall in value. The companies then have to provide more marginal collateral, primarily cash, to fulfil the requirements of the central counterparty. This could lead to a need to sell government bonds, for example, which could exacerbate stress in the financial system. According to the Riksbank's previous stress tests, the use of interest rate swaps

[53] Of the financial assets of just over SEK 16,310 billion belonging to Swedish insurance and pension companies and investment funds, almost 42 per cent are foreign assets, according to Statistics Sweden's financial accounts.

[54] Other actors in Chart 25 include foreign insurance and pension companies and investment funds. As the foreign ownership share is obtained through a residual calculation, it is not possible to say what share of the assets are owned by the foreign counterparts.

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

is not currently large enough to cause problems in the funding markets in a stressed situation.[56] However, liquidity risks could increase in the future if companies enter into a higher volume of interest rate swaps.[57]

Swedish funds can also contribute to instability in a stressed situation. Here, the vulnerabilities are mainly related to corporate bond funds and remaining discrepancies between fund liquidity and the ability of unit holders to redeem their fund units. Even though some changes are being made among the funds, this risk remains, which the Riksbank has emphasised in several financial stability reports. For example, the share of cash in the funds' portfolios has remained largely unchanged over time.[58] The same applies to the share of more liquid bonds (such as covered bonds and government bonds) in the portfolios. The risk therefore remains that, in a stressed situation, funds may have to sell relatively illiquid assets to meet withdrawals from unit holders, which may exacerbate market stress and make it more difficult for companies to obtain funding through the bond market.

The market stress that has emerged on a number of occasions in recent years is partly due to the imbalances that emerged during the period of very low interest rates. For example, the search for yield during the low interest rate period compressed credit risk premiums in the capital markets. As a result, even companies with lower credit quality could access inexpensive funding by issuing bonds. From this perspective, the rise in interest rates has entailed a normalisation. This is partly reflected in corporate bonds now being priced with more differentiated risk premiums so that higher risk corresponds to higher borrowing costs. This makes it easier for all investors to find investment opportunities with an expected return and risk that fits their long-term risk appetite. This will also make it easier for them to take a longer-term view of the corporate bond market. This may lead to a greater share of longer-term investments, for example by insurance and pension companies, which could help to reduce the risk of liquidity-driven sell-offs of corporate bonds.

Climate change may put a long-term burden on insurance companies

Insurance companies have also been at the centre of the international debate on climate-related stability risks. This is because climate change risks leading to more nature-related damage with significant economic consequences, affecting insurance companies and others.[59] Finansinspektionen makes the assessment that the risk of Swedish non-life insurance companies experiencing financial problems due to natural disasters is small in the short term.[60] However, the risk may increase in the longer

[56] See *Financial Stability Report,* 2023:1, Sveriges Riksbank, page 68 onwards, for a more detailed description of companies' risk management with derivatives, and a stress test of their interest rate swaps.

[57] For a more detailed discussion of why liquidity risks may increase, See M. Andersson (2023), "The liquidity crisis in UK pension funds", *Staff memo*, Sveriges Riksbank.

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

[59] Globally, the total economic losses from nature-related damage in the first half of 2023 are estimated at USD 120 billion. Swiss Re (2023): Severe thunderstorms account for up to 70% of all insured natural catastrophe losses in first half of 2023, Swiss Re Institute estimates | Swiss Re (press release).

[60] See *FI-tillsyn 26: Svenska försäkringsbolag rustade för naturkatastrofer* [Swedish insurance companies prepared for natural disasters], March 2023, Finansinspektionen.

term as climate change may increase the frequency and magnitude of natural disasters. In a situation where there is damage to uninsured assets (known as the protection gap), the banking sector may also be affected. This is particularly true in countries where the banking sector has a high share of lending against uninsured collateral. This may have negative effects on financial stability.[61]

Short maturities and reduced liquidity in the foreign exchange market create risks

Insurance and pension companies usually hedge their investments in foreign bonds against foreign exchange (FX) risk. A large part of the FX hedging is done through FX swaps that have much shorter maturities than the bonds, which means that companies need to renew their swaps on a regular basis. The Riksbank has on several occasions emphasised that problems could arise in the financial system if they and the state-owned National Pension Insurance Funds (AP Funds) are unable to renew their swaps.[62] For example, they may have to sell a large amount of Swedish kronor against foreign currency to pay back the foreign currency part of the swaps. This amount of kronor, which they can in that case sell on the spot market, can be large in relation to the volumes normally traded there, leading to large exchange rate fluctuations.

This vulnerability has increased in recent years. One reason for this is that insurance and pension companies and the AP Funds have increased their FX hedging in US dollars (see Chart 26). If the FX swap market were to stop functioning for one month, around SEK 480 billion of US dollar hedges would expire. At the same time, turnover on the spot market has not increased to the same extent but has remained relatively stable. On average, the daily turnover has been approximately SEK 44 billion for the market as a whole and SEK 5 billion for the Swedish customer segment, of which the institutions are a part.[63] In addition, spot market liquidity, as measured by the difference between historical buying and selling prices, has deteriorated.[64]

[61] See Policy options to reduce the climate insurance protection gap, *Discussion paper*, April 2023, European Central Bank and European Insurance and Occupational Pensions Authority.

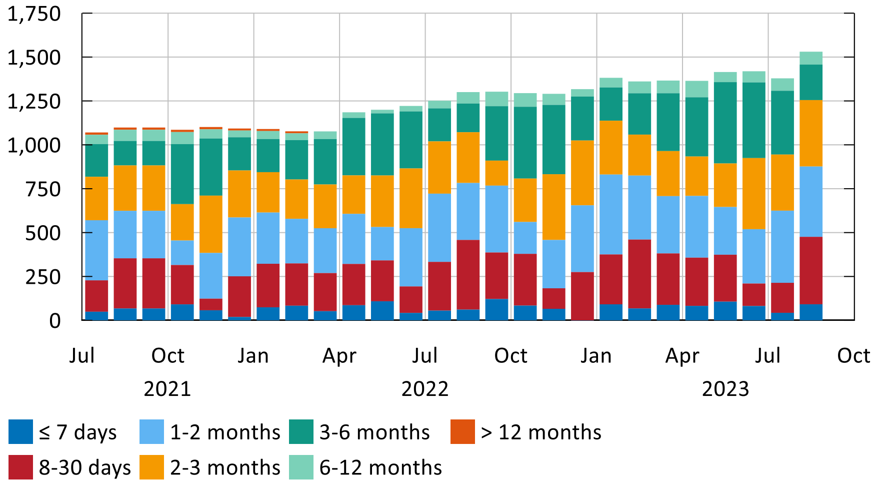
[62] See the article "The interconnectedness of insurance companies, National Pension Insurance Funds and banks via the foreign exchange market", *Financial Stability Report*, 2020:1, Sveriges Riksbank.

[63] This is based on data from Selma reporting from the Riksbank's counterparties and therefore does not necessarily give a complete picture of the market.

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

Chart 26. US dollar hedging by insurance and pension companies and National Insurance Pension Funds (AP Funds)

SEK billion



Note. Net positions by remaining maturity on the last trading day of each month. Based on nominal amounts for outstanding contracts where US dollars are exchanged for Swedish kronor or vice versa. In December 2022, the net position in currency hedges ≤ 7 days was equivalent to SEK -1.2 billion, meaning that the participants would deliver kronor. This observation has been excluded from the chart.

Source: The Riksbank.

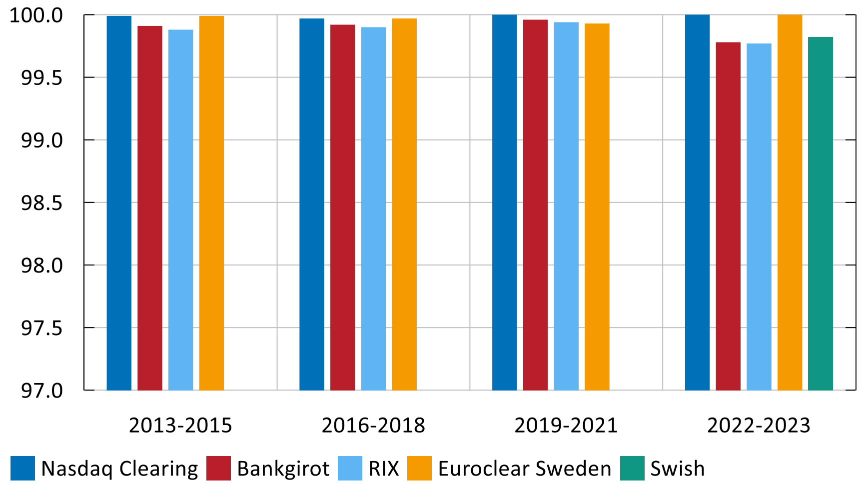
4.3 The financial infrastructure is facing major changes

Availability still good in the financial infrastructure

The availability of the Swedish financial infrastructure systems has been good over the past ten years (see Chart 27). This means that it has been possible to execute the great majority of all payments and securities transactions on time. The incidents that have occurred over the past six months, at RIX and the organisations that enable Swish payments (BankID, Bankgirot and Getswish), have been resolved on the same day they occurred. The incidents have therefore had only a minor impact on the ability to pay and have not affected financial stability.

Chart 27. Availability of the financial infrastructure systems

Per cent



Note. 100 per cent means that the system has been available 100 per cent of the time. Years 2022-2023 refer to data up to the first three quarters of 2023. The availability for Swish is calculated as 100 per cent availability minus the total interruption time for BankID, Getswish and Bankgirot's platform Betalningar i Realtid (Payments in Real Time).

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

Bankgirot is facing major changes

The banks, which own and operate the Bankgirot clearing organisation, have decided to modernise the payment infrastructure. As part of this, extensive work has been going on for several years to replace Bankgirot, which has led to the development of Bankgirot's systems being given lower priority. Since the cancellation of the replacement plans in the spring, there has been considerable uncertainty about the future of the payment infrastructure. However, Bankgirot has now been commissioned to drive the work of designing the solution of the future, which is positive. At the same time, the assignment presents challenges, because Bankgirot's systems need to be developed and modernised, while the existing operations need to be able to run without disruption. To implement the plan, Bankgirot needs long-term financing, a board of directors that can take the necessary decisions on risk management measures and enough staff with the right skills, among other things. This requires good governance and control from Bankgirot's owners, at the same time as the Bankgirot board needs to act sufficiently independently with regard to ownership interests. There should also be independent board members with no direct link to the owners. Recently, there have been some changes in Bankgirot's board that point in a positive direction. The Riksbank will continue to monitor how Bankgirot is governed by the banks, and how the work on appointing independent board members is progressing.

Significant changes in the Swedish CCP landscape

During the year, participants in the Swedish central counterparty (CCP) Nasdaq Clearing's commodity clearing have had lower margin requirements than in the autumn of

2022.[65] This is because prices and volatility in the Nordic electricity derivatives market have returned to more normal levels. Nasdaq Clearing decided in June to divest its commodity clearing business.[66] This means that in future they will only offer clearing of financial derivatives, and thus have fewer risks to manage. Instead, the Nordic electricity derivatives, which are currently cleared at Nasdaq Clearing will then be managed by the German CCP European Commodity Clearing (ECC). The ECC is supervised by German authorities who follow the same EU rules as Finansinspektionen. Thus, the current assessment is that the divestment will not significantly affect the users of these clearing services. When using the ECC for clearing, the non-financial companies may need to do so indirectly, via a bank, rather than as direct participants, as is usual at Nasdaq Clearing. If so, this may have implications primarily for the CCP rather than the users, as banks should generally have better liquidity preparedness than non-financial companies.

As CCPs have links to most systemically important markets and participants, and may need to obtain liquidity very quickly, the Riksbank has decided to offer CCPs the opportunity to borrow money overnight by establishing a special lending facility.[67] The facility enables CCPs to quickly convert securities into cash, if market solutions for doing so are either unavailable or risk disrupting the interest rate setting the Riksbank wants to achieve through its monetary policy measures.

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

[66] See Nasdaq Inc. (2023): EEX and Nasdaq Commodities Announce Intention to Transfer Nasdaq's European Power Business to EEX | Nasdaq, Inc. (press release).

[67] See Sveriges Riksbank (2023): The Riksbank offers central counterparties deposit and lending facilities (press release).

FACT BOX - PayPal's new stablecoin

In recent years, crypto-assets have been used to challenge traditional financial markets and institutions. However, their use has so far been relatively modest. However, Paypal's launch of its stablecoin, PYUSD, in August 2023 has raised the question of whether this relationship is about to change.[68].

Stablecoins are a type of crypto-asset whose purpose is to maintain a stable value over time in relation to a currency or other asset.[69] The PYUSD is pegged to the US dollar. So far, the amount of PYUSD in circulation is marginal. But unlike other stablecoin issuers, PayPal is an established player in the payments market with an existing infrastructure and a large customer base – over 250 million users in the US and 435 million globally. The PYUSD could therefore be in a position to be accepted as a means of payment by the general public. If payments are increasingly replaced by PYUSD, and PayPal thus replaces existing payment systems, it could have a major impact on the business model of both payment companies and banks, as an increasing share of payments would be cleared outside the banking system. The lack of US federal regulation of crypto-assets has been highlighted as a problem from this perspective.

Stablecoins need to be backed by liquid reserve assets for users to see the link to the underlying asset as credible. Stablecoins are thus vulnerable to large and sudden withdrawals by unit-holders/users. Large withdrawals may require underlying assets to be sold, which may negatively affect the price of the asset. This vulnerability is reinforced by the lack of regulation and transparency, which makes it more difficult for market participants to assess the risks. However, for the PYUSD, the underlying reserve assets consist largely of government securities with short maturities, where liquidity is relatively good. Moreover, compared to that market, stablecoins' reserve assets are very limited, which also reduces the risk of a large price impact.

Some of the PYUSD's reserve assets consist of bank deposits. In principle, a run on the PYUSD could therefore have a negative impact on banks, as reserve assets in the form of bank deposits would need to be withdrawn. This is also true if increased purchases of PYUSD were to occur at the expense of bank deposits. In both cases, banks would have to replace household deposits with wholesale funding, or more expensive household deposits in savings accounts. As usage of PYUSD is limited so far, it does not currently appear to pose a direct risk to US banks, but PayPal's significant customer base means that this could quickly change. In Sweden, PayPal is relatively small and as the MiCA regulation limits the use of stablecoins pegged to currencies other than the euro, the potential for PYUSD to expand within the EU is also limited.[70]

[68] Formally, it is issued by Paxos Trust Company.
[69] See H. Eklööf (2022), "An overview of fintech and cryptoassets", *Staff Memo*, Sveriges Riksbank.
[70] MiCA refers to the Markets in Crypto Assets Regulation.

FACT BOX - Capacity to recover from cyber attacks

It is of great importance that all participants in the financial sector work to increase resilience to cyber attacks. This is continuously improving in the financial system, but not at the same pace as the changing threat landscape. As part of the work on identifying risks, the Riksbank carried out a survey in spring 2023 on the capacity of financial institutions to quickly and safely restart systems and restore quality-assured data after a cyber attack. In this study, the Riksbank examined the capacity to recover from a full-scale cyber attack, which is a serious attack that disrupts critical technical systems and thus poses a risk to the financial system.

The responses to the survey show that institutions providing critical functions have some ability to recover from a full-scale cyber attack, but that they can do more to strengthen their resilience. The Riksbank's assessment is that the institutions should, among other things, find out how much time they need to restore critical functions after a full-scale cyber attack, and carry out more and more extensive tests and exercises. For example, exercises where institutions restore several critical systems simultaneously can increase resilience. The Riksbank assesses that the implementation of such exercises can increase resilience and thereby reduce cyber risks to the financial system in the long term.

ARTICLE – Flightiness of deposits varies across Swedish banks

The spring turmoil in the banking market emphasised the risk associated with bank deposits. Although the situation in the foreign banks affected was special, the course of events highlighted the need in general to increase knowledge about depositor behaviour. The Riksbank has therefore conducted an in-depth analysis of deposits in the Swedish banking sector. The results show that some banks have a higher concentration of deposits from individual depositors, but there is no evidence that deposits are particularly concentrated in a single sector. The data also show that banks with a higher share of deposits not covered by deposit insurance hold a larger liquidity buffer. At the same time, the results indicate that deposits may be more flighty in some smaller banks, in particular deposits that are not covered by deposit insurance. This was observed, for example, during the outbreak of the coronavirus pandemic. Several consumer credit banks also have a large share of deposits in Germany, partly through deposit platforms, which are likely to be more flighty. This combined with the fact that new technologies and social media may have made deposits more flighty, make it important to continue monitoring the risks associated with deposits going forward.

Deposits also entail liquidity risks

Households, companies and financial institutions all need to deposit money in accounts at banks. These deposits are an important part of banks' funding and have traditionally been considered a more stable source of funding than market funding. But deposits can also disappear if confidence in a bank is lost and customers want to withdraw their money. Moreover, the speed of the bank runs at a number of US banks in the spring suggests that deposit flightiness may have increased as a result of technological developments. This is because information spreads very quickly via social media and it is very easy to move money.

Although the Swedish banking sector coped well during the spring turbulence, there are reasons to increase knowledge about deposits in Swedish banks. The Riksbank has good knowledge of the banks' funding structures and the composition of deposits, but more data is needed to make a more detailed analysis of other interesting aspects. The Riksbank has therefore asked for detailed data on deposits in 24 Swedish banks.[71]

[71] The data show, among other things, the distribution of deposits across sectors, currencies, countries, individual depositors, account types, and the level of deposit insurance. The frequency is monthly and with a

Deposits differ among different types of banks

At the end of the second quarter of 2023, deposits in the Swedish banking sector amounted to just over SEK 10,000 billion,[72] which is about 170 per cent of Sweden's annual GDP. However, in an international perspective, deposits in the Swedish banking sector are small in terms of the size of total liabilities and lending.[73] The amount of deposits in Swedish banks varies depending on the type of bank. The major banks and mortgage banks have a relatively small proportion of deposits in relation to total liabilities, 50 and just under 40 per cent respectively (see Chart 28). This is because they largely finance themselves on the capital markets. For other types of banks, deposits represent at least 75 per cent of total liabilities and are thus the most important source of funding. The chart also shows that private individuals account for a large share of deposits for many banks. This is particularly true for consumer credit banks, where over 95 per cent of deposits come from private individuals. The major banks, savings banks and security trading banks also have a significant share of corporate deposits. Deposits from financial companies also constitute a relatively large share of the deposits of the major banks and security trading banks.

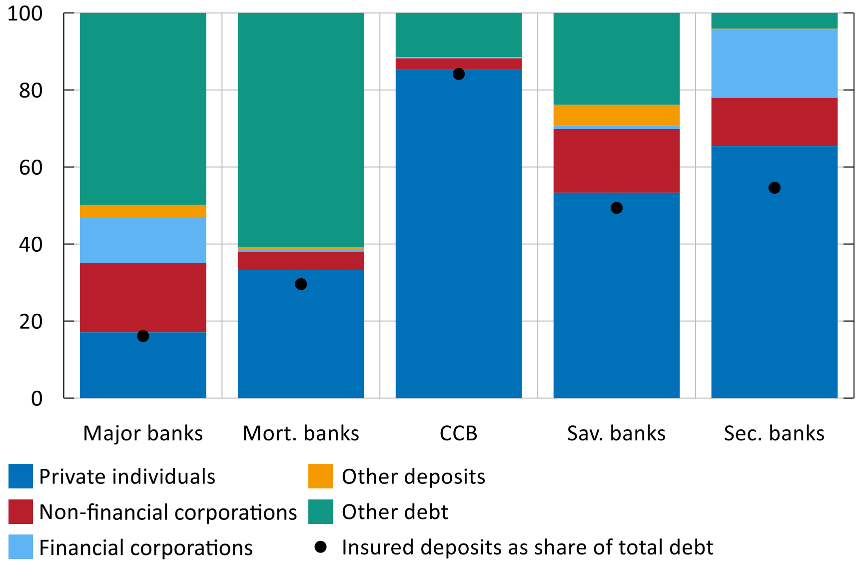
5-year history. The data has been collected from the following banks and banking groups: Major banks: Handelsbanken, Nordea, SEB and Swedbank. Mortgage banks: Bluestep, Landshypotek, Länsförsäkringar Bank, SBAB and Skandiabanken. Consumer credit banks: Hoist Finance, ICA Banken, Ikano, Klarna, Marginalen, Nordax, Norion (formerly Collector), Resurs, Svea Bank and TF Bank. Savings banks: Sparbanken Nord, Sparbanken Sjuhärad and Sparbanken Skåne. Security trading banks: Avanza, Carnegie and Nordnet. The grouping of banks is based on FI's Banking Barometer. The data collected cover 85 per cent of deposits in all Swedish-controlled MFIs. The term "*banks"* in the article refers to entire banking groups.

[72] The figure includes deposits in Swedish MFIs' parent companies and foreign branches as well as foreign banks' branches and subsidiaries in Sweden. Swedish banks' foreign subsidiaries are excluded. The figure may therefore differ from Swedish banks' deposits at group level.

[73] For example, for Sweden and the other Nordic countries, the ratio of loans to deposits is significantly higher than for the US and other EU countries, as Nordic banks finance their lending to a greater extent through the capital markets.

Chart 28. Deposits by type of depositor

Per cent



Note. Mort. banks: Mortgage banks. CCB: consumer credit bank, Sav. banks: savings banks, Sec. banks: security trading banks. The chart shows the share of total liabilities.

Source: Banks' data reported to the Riksbank.

The share of insured deposits differs among banks

The amount of funding consisting of deposits not covered by the state deposit insurance scheme differs between bank types, as the Riksbank has previously highlighted.[74]. One third of the major banks' total liabilities consist of uninsured deposits (see Chart 29). The corresponding figure for security trading banks is 41 per cent, for savings banks 27 per cent, for mortgage banks 9 per cent and for consumer credit banks 4 per cent. The difference in the figures is partly due to the ratio of deposits to total liabilities and partly due to who the depositors are. Those banks that mainly receive deposits from a large number of private individuals have a high share of insured deposits.[75] This applies, for example, to the consumer credit banks for which insured deposits constitute 95 per cent of total deposits. For the major banks, about one third of deposits are insured. One of the reasons why a large share is not insured is that they have a lot of deposits from companies, both non-financial and financial. Around 60 per cent of the security trading banks' deposits are insured as they have deposits from private individuals that exceed the maximum insured amount and a relatively large proportion of deposits from companies.

The analysis shows that banks with a higher share of uninsured deposits, such as the major banks and security trading banks, have a larger buffer of high-quality liquid assets (HQLA) with regard to total liabilities (see Chart 29). The buffer requirement is designed under the Basel framework to cover various outflows from the bank in a

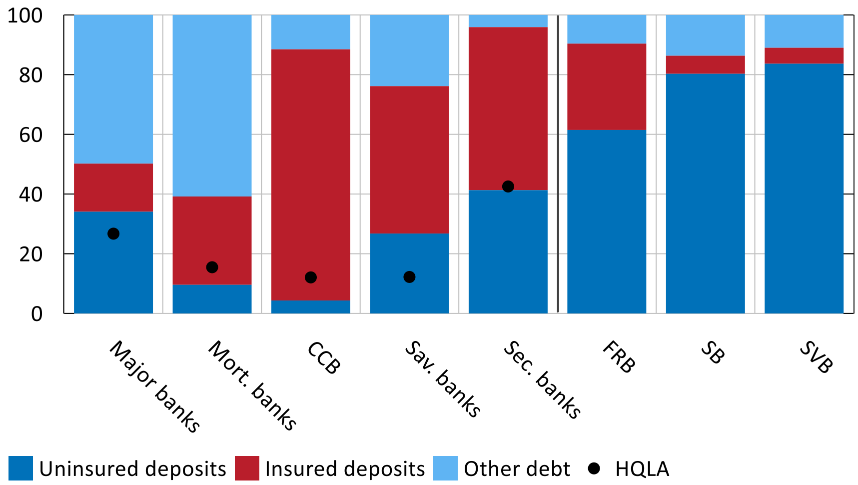
[74] See *Financial Stability*, 2023:1, Sveriges Riksbank.

[75] In Sweden, deposit insurance applies up to SEK 1,050,000 per depositor and institution. It applies to all private individuals, as well as companies and other legal entities. However, it does not cover financial companies.

stress scenario. The required size of a bank's buffer depends on several factors, including the type of funding. Deposits that are categorised as more flighty under the regulations drive up the buffer requirement. Corporate deposits, and especially financial deposits, are considered more flighty than retail deposits. In general, uninsured deposits are also classified as more flighty than insured deposits.

Chart 29. Liabilities broken down by deposits and other liabilities, in relation to HQLA

Per cent



Note. Percentage of total liabilities. CCB: Consumer credit bank, Sav. banks: Savings banks, Sec. banks: Security trading banks, FRB: First Republic Bank, SB: Signature Bank and SVB: Silicon Valley Bank. Data on HQLA for US banks are missing as small and medium-sized banks in the US are exempt from the Basel framework and therefore do not report these figures.

Sources: Data reported by banks to the Riksbank, the Federal Deposit Insurance Corporation and the Federal Reserve.

Some types of banks are more exposed to individual depositors

The Riksbank has also analysed whether Swedish banks' deposits are concentrated in certain sectors or individual depositors, as this may increase the risk in a bank's deposits.[76]. The data collected show the sectoral affiliation of the 50 largest depositors from financial companies and the 50 largest depositors from non-financial companies.[77] The Riksbank finds no indication that any of the Swedish banks' deposits are particularly concentrated in a single sector.

Chart 30 shows the share of bank deposits held by individual depositors. Looking at the black line, which represents the average for all banks combined, the 100 largest depositors account on average for just under 10 per cent of total deposits. In security trading banks and major banks, the 100 largest depositors account for a significantly

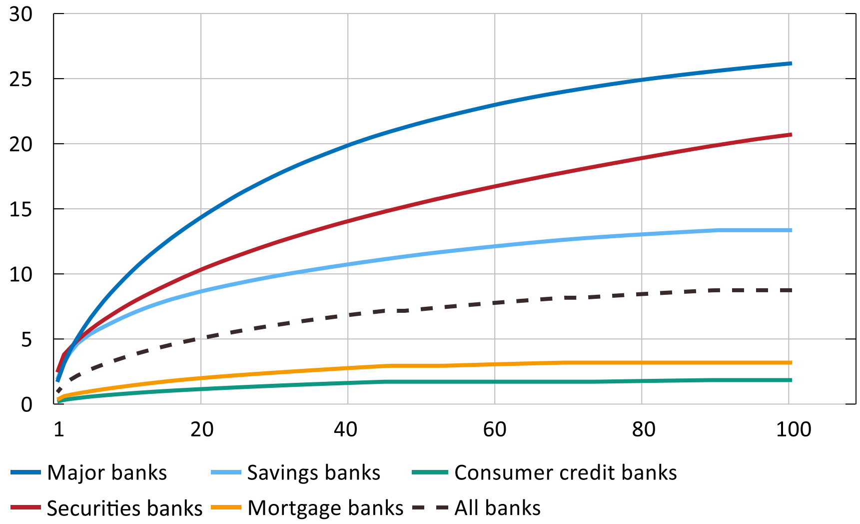
[76] A related example is the US banks that were exposed to risks in the tech industry and ran into problems in the spring. At SVB, these depositors accounted for more than half of their deposits. *Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank*, April 2023, Federal Reserve.

[77] The Riksbank has also requested data on the largest deposits from private persons, central banks, and other counterparties.

larger share of total deposits than in other banks, 20 and 25 per cent respectively. The averages of both groups are largely driven up by individual banks included in each group. These banks are higher because they have more deposits from companies, which are fewer in number than private individuals but make larger deposits. However, among the security trading banks, some private individuals are also among the 100 largest depositors.

Chart 30. Share of the 100 largest depositors in bank deposits

Per cent



Note. Cumulative share of total deposits, average by bank type. On the horizontal axis, depositors are ranked from 1 to 100, with the largest depositor being ranked 1. Far left: the average share of the largest depositor for a given type of bank. Far right: the average share of the 100 largest depositors for a given type of bank.

Source: Banks' data reported to the Riksbank.

Consumer credit banks' deposits abroad can be more flighty

Several Swedish banks have subsidiaries and branches outside Sweden, so they may also have deposits from other countries. In terms of concentration in different countries, more than 60 per cent of Swedish banks' deposits are in Sweden. In addition, just over 12 per cent are in the Baltic States, just under 8.5 per cent in one of the other Nordic countries, 8 per cent in the United States and just under 6 per cent in the United Kingdom. The vast majority of the banks included in the dataset only have deposits in Sweden. The significant foreign exposures are with the major banks and consumer credit banks. The major banks have deposits in the US, the UK, the Baltic States and the other Nordic countries.

Deposits in Germany represent 3 per cent of the total for all banks, but in several consumer credit banks, deposits in Germany represent between 20 and 90 per cent of their total deposits. Several of these banks have opted to join major deposit platforms, where savers can easily switch accounts, for example to get a higher savings rate. These deposits may therefore be more flighty than direct deposits. However, the higher flightiness is offset to some extent by the fact that some of the deposit volumes on these platforms are held in fixed-term accounts with limited withdrawals of six months or more.[78].

Deposit flightiness varies across depositors and bank types

In order to form an opinion on flightiness, the Riksbank has analysed the inflows and outflows in banks' deposits during the period covered by the data material, i.e. January 2018 to June 2023. The largest monthly outflows from each bank's total deposits during the period ranged from 1 to 22 per cent (see Chart 31).[79] It is clear that outflows differ between different types of deposits. For example, insured deposits from private persons had smaller outflows than uninsured deposits. The same applies to deposits from non-financial companies. There is also a clear difference in the size of the outflows between operational[80] and non-operational corporate deposits, where the outflows for non-operational deposits were significantly larger.

The analysis also shows that deposits from financial companies (which are almost exclusively held by the major banks and security trading banks) had the largest outflows. Of these deposits, credit institutions as well as fund managers and alternative investment fund managers accounted for the largest outflows. The large outflows from credit institutions are largely due to year-end effects. The transfer of deposits by credit institutions at the turn of the year is a recurring phenomenon and is due to the fact that banks want to reduce their balance sheets at this time, which they do by, among other things, lowering the interest on this type of deposit.[81] These outflows usually do not pose any liquidity stress as they are expected and banks therefore hold liquid assets to meet the outflows.

The variation in the outflows observed is generally in line with what is expected. For example, the Basel framework assumes that uninsured deposits are more flighty than insured ones, that non-operational deposits are more flighty than operational ones, and that financial deposits are the most flighty category. However, the analysis shows that outflows from private individuals and non-financial companies were roughly equal, which differs from the regulatory framework that generally classifies corporate deposits as more flighty than those from private individuals.[82]

[78] See Svahn (2023), "Buy now pay later - a threat to financial stability?" *Staff memo*, Sveriges Riksbank.

[79] The analysis refers to net outflows and is based on month-end to month-end balances as these data do not cover daily observations.

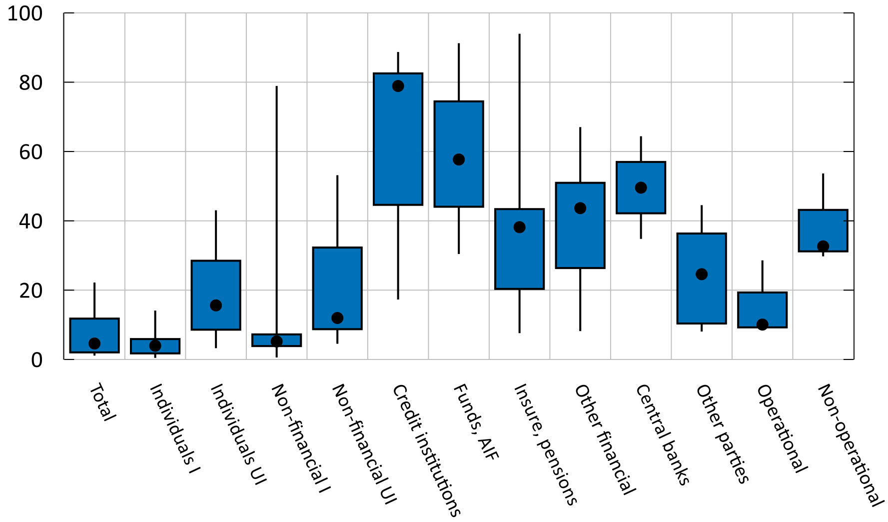
[80] Operational deposits refer to deposits linked to banking services related to a company's operational activities, such as payroll, cash management and clearing. Non-operational refers to other corporate deposits.

[81] Banks do this to reduce their resolution fee, deposit insurance fee and bank tax, which are calculated on the basis of the year-end balance sheet value. While outflows from these groups were very large, it is worth bearing in mind that this type of deposit constitutes a limited share of total deposits.

[82] In the Basel framework, the outflow assumption in a 30-day stress scenario for retail deposits (which refers to private persons and small and medium-sized enterprises) is 3 to 5 per cent for insured deposits and 10 per cent for uninsured deposits. For non-financial companies, these figures are 5 to 20 per cent for insured deposits and 25 to 40 per cent for uninsured deposits. For deposits from financial companies, the figure is 100 per cent. See Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools, January 2013, Bank for International Settlements (BIS).

Chart 31. Largest monthly outflows of deposits

Per cent



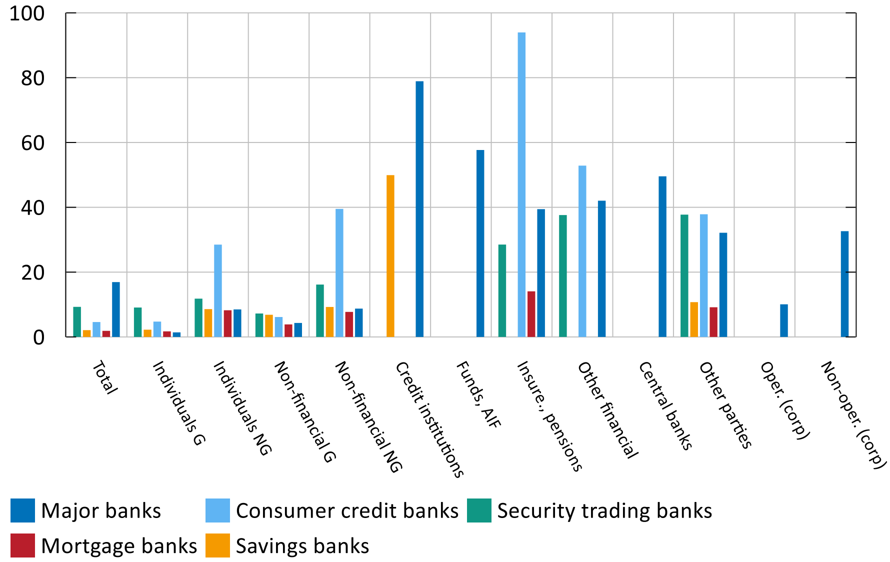
Note. Percentage of total deposits for each deposit category. The data refer to the banks' largest monthly outflows between January 2018 and June 2023 and are illustrated in the chart with the values for max/min, first quartile and third quartile. The points in the chart represent the median for each category. If a bank's deposits from a deposit category are less than one per cent of its total deposits, they are excluded so that very small volumes do not distort the overall picture. "I" and "UI" after a category name stand for "Insured" and "Uninsured" respectively. "Operational" and "non-operational" refer to this type of deposit only from non-financial and financial companies, and data only from major banks. AIF stands for alternative investment fund manager.

Source: Banks' data reported to the Riksbank.

Outflows in total deposits differed by bank type. In terms of the median, the major banks had the largest outflows (17 per cent), followed by security trading banks (9 per cent), consumer credit banks (5 per cent), mortgage banks (2 per cent) and savings banks (2 per cent) (see Chart 32). The differences are partly due to the fact that the major banks and security trading banks account for most of the deposits from financial companies, i.e. the category with the largest outflows. Notably, within the category of uninsured deposits from private persons, consumer credit banks had the largest outflows. The same applied to the uninsured deposits of non-financial companies. However, uninsured deposits represent only a small share of the total deposits of consumer credit banks.

Chart 32. Largest monthly outflows of deposits

Per cent



Note. Percentage of total deposits per deposit category. The data refer to banks' largest monthly outflows between January 2018 and June 2023 and are illustrated in the chart with the median per bank type. If a bank's deposits from a deposit category are less than one per cent of its total deposits, they are excluded so that very small volumes do not distort the overall picture. This, and the fact that some banks do not have deposits in certain categories, means that the median is sometimes calculated on the basis of fewer banks than all banks per bank type. "I" and "UI" after a category name stand for "Insured" and "Uninsured" respectively. "Operational" and "non-operational" in the chart refer to this type of deposit only from non-financial and financial companies, and data only from major banks. AIF stands for alternative investment fund manager.

Source: Banks' data reported to the Riksbank.

Some banks had larger outflows in connection with the coronavirus outbreak

It is important to distinguish between expected outflows, which result from certain deposits being inherently more flighty, and unexpected outflows, which, due to stress and loss of confidence, result in larger than expected outflows. If a bank were to experience large unexpected outflows of this nature, it could lead to liquidity problems. To investigate whether certain deposits showed signs of increased flightiness during more stressed situations, the Riksbank has analysed deposits in connection with the outbreak of the coronavirus pandemic, Russia's invasion of Ukraine and the spring bank turmoil.[83]

The results show that the major banks did not have significantly different outflows during any of these events, while some other banks saw increased outflows, especially during the coronavirus pandemic. This applies in particular to some consumer

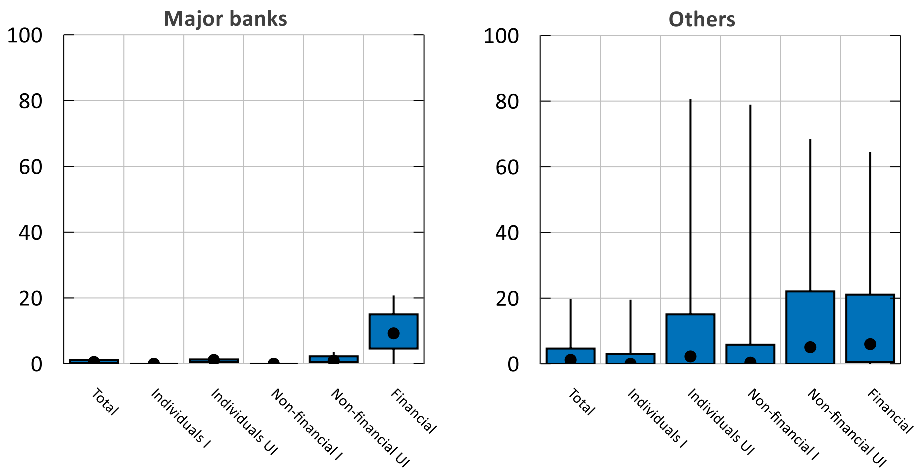
[83] The study examined whether there had been a decline in bank deposits around the different events from one month before the event took place and four months after. *If* a decline occurred, the number of months with a continuous decline was counted, as well as the decline as a percentage of deposits. Note: the method does not adjust for seasonality or other factors that may have affected banks' deposits.

credit and security trading banks, while flows were smaller for mortgage banks and savings banks.

As outflows were mainly related to the outbreak of the pandemic, the results below focus on that period. In that period, the number of consecutive months of outflows was 0 to 2 months for the major banks, and 0 to 10 months for other types of banks. During that period, outflows represented 0 to just under 2 per cent of total deposits for the major banks and between 0 and 20 per cent for other banks (see Chart 33). Over the period, outflows differed somewhat across deposit categories. For example, the major banks had almost no outflows from private individuals, while other banks had larger outflows, especially in uninsured deposits. The same pattern was found in deposits from non-financial companies.[84]

Chart 33. Outflows of deposits around the coronavirus outbreak

Per cent



Note. Percentage of total deposits per deposit category. The data refer to observed deposit outflows around the outbreak of the coronavirus pandemic for banks and are illustrated in the chart with the values for max and min, and first quartile and third quartile. The points in the chart represent the median for each category. "I" and "UI" after a category name stand for "Insured" and "Uninsured" respectively.

Source: Banks' data reported to the Riksbank.

More households and companies are moving their deposits to restricted withdrawal accounts

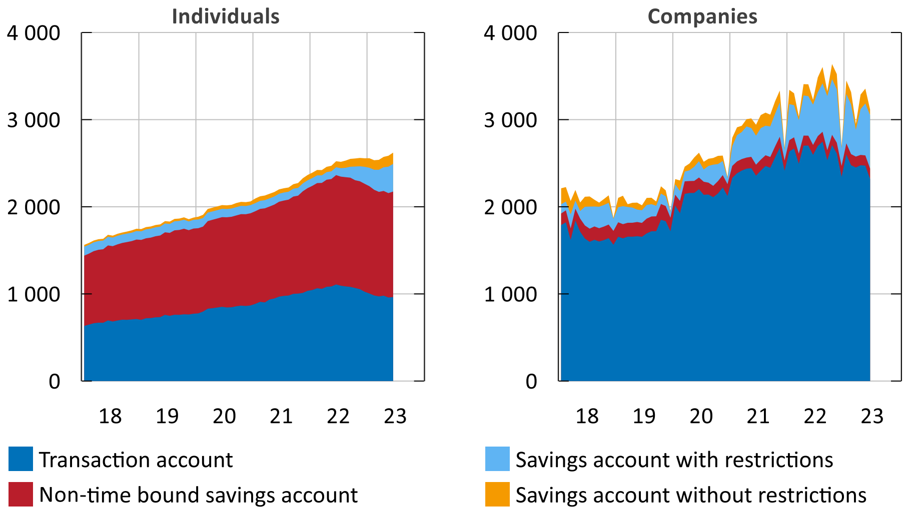
Typically, different account types are associated with different degrees of flightiness. Deposits in savings accounts that offer a higher interest rate in exchange for restrictions on withdrawals over a period of time, known as fixed-term savings accounts, can be considered less flighty than deposits in unrestricted accounts. For companies, the vast majority of deposits are held in transaction accounts, which generally have

[84] Although some smaller banks had large percentage outflows of uninsured deposits from private individuals and non-financial companies, and of financial deposits, the volume was often relatively small as the share of these types of deposits is often small for these banks.

no restrictions on withdrawals.[85] For households, these accounts make up around 40 per cent of deposits, while the remaining funds are held in various types of savings accounts. Between 2018 and 2022, deposits increased sharply, particularly in connection with the pandemic, when many households and companies increased their savings (see Chart 34). Deposits in transaction accounts increased the most, especially for companies. Since the end of 2022, deposits in transaction accounts have decreased slightly, while deposits in fixed-term savings accounts with restrictions on withdrawals have increased.[86]

Chart 34. Account distribution

SEK billion



Note. “Savings account without restrictions” and “Savings account with restrictions” refer to fixed-term accounts where the depositor has agreed to restrictions on withdrawals for an agreed period of time, usually in exchange for a higher savings rate. “Transaction account” also covers custody accounts, ISK accounts, etc. Financial companies account for just under 40 per cent of deposits from companies, although they account for around 70 per cent of the deposits in “Savings account with restrictions”.

Source: Banks’ data reported to the Riksbank.

Important to continue analysing the risks associated with deposits

The results of the analysis show that some major banks and security trading banks are more exposed to a small number of depositors, which could pose a higher risk. These types of banks also have a higher share of uninsured deposits - deposits that are generally more flighty. However, the data show that these banks compensate for the higher flightiness by holding a larger liquidity buffer. Compared with the US banks

[85] A transaction account is an account used for recurring transactions such as salary, pension or bill payments. This analysis also includes ISKs, custody accounts and other accounts in the group of transaction accounts. In contrast, savings accounts are generally used for less regular deposits and withdrawals and usually have better interest rates to encourage the depositor to keep the funds in the account.

[86] The conditions for making withdrawals vary from bank to bank but usually include some sort of maximum amount for a single withdrawal.

that experienced problems last spring, Swedish banks' share of uninsured deposits is significantly less, in relation to both their total deposits and total liabilities. Nor can the analysis find evidence that Swedish banks' deposits are concentrated in a particular sector, as was the case in some of the US banks that experienced problems.

The analysis also shows that deposits may be more flighty at some smaller banks. During the observed period, consumer credit banks had larger monthly outflows of uninsured deposits from private individuals and companies than the other bank types. Some consumer credit banks and security trading banks also experienced larger deposit outflows during the outbreak of the coronavirus pandemic. In addition, several consumer credit banks have a large share of deposits in Germany, partly through digital deposit platforms. This could contribute to risks as deposits through such platforms are likely to be more flighty. If a larger share of the banking sector's deposits were to be on such platforms, this could lead to increased stability risks.

Despite the interesting lessons learnt from the analysis, we cannot know in advance how depositors would act if the Swedish banking system was hit by a major crisis in the future. If banks were to experience large, unexpected withdrawals of deposits, this could lead to liquidity problems. The fact that depositors can now move money very quickly and that social media can quickly aggravate turmoil may have recently increased the liquidity risk in deposits. This is something that requires increased vigilance and is important to continue to analyse going forward.

ARTICLE – Company bankruptcies on the rise

The number of company bankruptcies has increased and between January 2022 and September 2023, over 12,000 limited liability companies went bankrupt, which is more than the average of the last 5 years. So far, however, the rapid increase in bankruptcies has been mainly concentrated in a few sectors and most companies have had few employees. The Riksbank has analysed the companies that have gone bankrupt and the vulnerability of companies that are still active. The article shows that the companies that have gone bankrupt have been highly indebted in relation to their assets and had weak cash flows for many years. However, the size of the aggregate loans was limited and the bankruptcies have therefore had a limited impact on banks' loan losses. However, the article shows that there are still about 40,000 active companies with similar attributes. They could cause larger loan loss provisions for Swedish banks if they encounter problems.

More bankruptcies after several years of economic shocks

Since the beginning of 2022, economic conditions have been characterised by high inflation, falling growth and rising interest rates. As a result, the financial position of many companies has gradually deteriorated. The number of bankruptcies has gradually increased since the summer of 2022 and the bankruptcy rate is now higher than normal (see Chart 35).

The Riksbank has studied the majority of the over 12,000 companies that went bankrupt during the period January 2022 to September 2023 (hereafter referred to as bankrupt companies).[87] In addition, companies that are still active (hereafter referred to as remaining companies) have been studied to investigate how many could be vulnerable in the current economic environment and could cause larger loan loss provisions for Swedish banks (hereafter referred to as vulnerable companies).[88] The analysis is based on the Serrano database, which contains annual report data for Swedish-

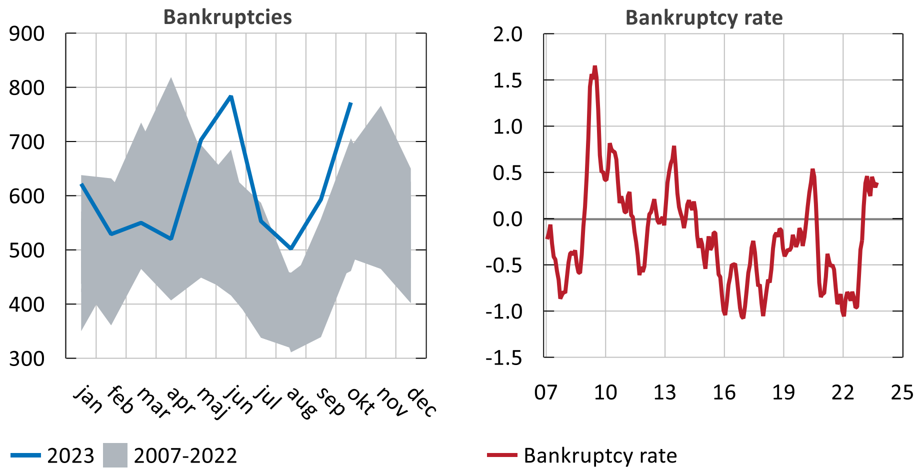
[87] The sample is based on the limited companies that went bankrupt during the period January 2022 to September 2023 according to data from Creditsafe. The analysis does not therefore cover the other 772 limited liability companies that went bankrupt in October 2023.

[88] Vulnerable companies are defined as companies with a leverage ratio above 200 per cent and an interest coverage ratio below 1.5.

registered limited companies over the period 1998 to 2021.[89] The database provides information on the financial position of companies in 2021 for 7,000 of the bankrupt companies and 545,000 remaining companies. The analysis treats all companies as independent, regardless of whether they belong to a corporate group.

Chart 35. Number of company bankruptcies has increased

Number of bankruptcies, standard deviation from the mean



Note. The chart on the left shows the number of bankruptcies per month for the years 2007 – 2023. The grey range shows the minimum and maximum number of bankruptcies in a single month. The chart on the right shows bankruptcies among limited companies in relation to the total number of registered companies. The number of registered companies in 2023 is assumed to be the same as in 2022. The bankruptcy rate refers to a 6-month moving average, normalised values. A value above zero indicates more bankruptcies than normal.

Sources: UC and Statistics Sweden.

More bankruptcies but mainly in a few sectors

During the pandemic, many companies, particularly in the trade, construction and restaurant sectors, benefited from fiscal support measures such as loan guarantees and tax forbearance.[90] The support probably helped some companies to survive somewhat longer than would otherwise have been possible and keep bankruptcies relatively low during the pandemic.[91] Today, over 24,000 companies still have outstanding

[89] Taking the limited companies that were active in 2021 as a starting point, the Riksbank has selected companies belonging to the category non-financial companies and that submitted an annual report to the Swedish Companies Registration Office for the financial year 2021. This was just over 545 000 companies. For 7,000 of the bankrupt companies, we have company-specific information from their annual reports up to and including 2021 – i.e. up to 1.5 years before the actual bankruptcy.

[90] Loan guarantees are when the state guarantees the loans of companies to a certain extent. For example, in the state's emergency loan guarantee scheme, up to 70 per cent of the loans for SMEs were guaranteed. However, the state is not the lender here. It is banks and other credit institutions that are the lenders and they also do the actual credit checks. Tax forbearance helps strengthen a company's liquidity as its tax payments are deferred. If an application is granted, the forbearance amount is subject to interest and fees.

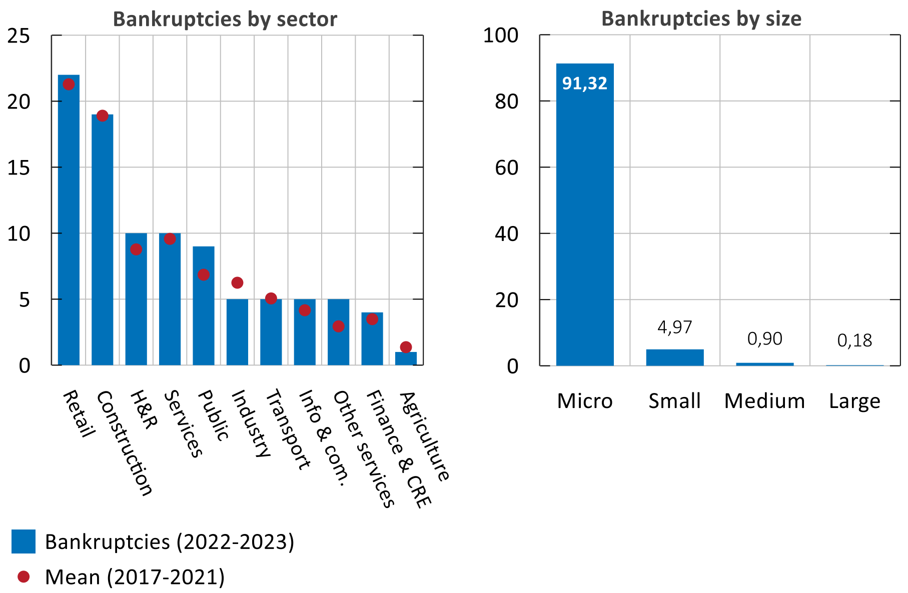
[91] See the article Bankruptcies during the initial phase of the coronavirus pandemic in *Financial Stability Report*, 2020:2, Sveriges Riksbank, and C. Cella (2020), "Bankruptcy at the time of COVID-19 - The Swedish experience", *Staff memo*, Sveriges Riksbank.

unpaid taxes.[92] This past year, as a result of high inflation and rising interest rates, companies have faced significantly higher costs and lower demand. This has worsened the profitability of some companies and thus their financial position.

Of the 12,000 companies that went bankrupt between January 2022 and September 2023, the highest share was among companies operating in the trade and construction sectors. These sectors accounted for around 20 per cent each. Next came hotels and restaurants and business services[93], all at around 10 per cent. Other service companies, in various sectors, which are not primarily aimed at other companies, together accounted for almost 10 per cent (see Chart 36). The distribution of bankruptcies by sector does not differ significantly from the historical distribution.

Chart 36. Bankruptcies by sector and size

Per cent



Note. Share of the total number of bankruptcies by sector and size class during the period January 2022 to September 2023. H&R stands for hotel and restaurants. The red circle indicates the average share over the period 2017-2021. Micro companies are defined as companies with 0-9 employees, small companies with 10-49 employees, medium-sized companies with 50-249 employees and large companies with more than 250 employees.

Sources: Creditsafe and UC.

Small companies account for the largest share of bankruptcies

The companies that have gone bankrupt during the period studied were mostly small and had few employees (see Chart 36). In our sample period, the average company

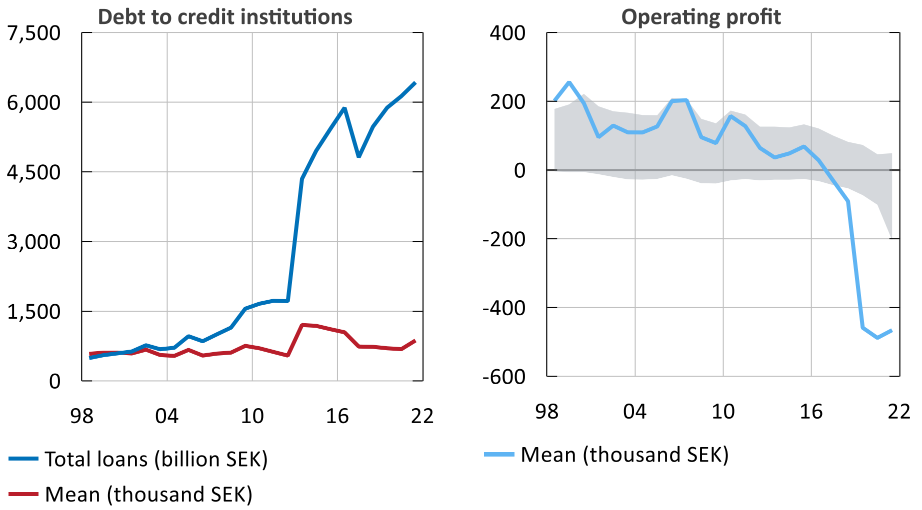
[92] See Swedish Tax Agency (2023): Anstånd med betalningar på 45 miljarder | Skatteverket [Deferred payments of SEK 45 billion] (press release).

[93] Service companies refer to companies active in the legal, economic, scientific and technical fields that primarily provide services to other companies (Swedish Standard Industrial Classification (SNI) group M).

had 4.8 million in total assets, but half of the companies had less than SEK 725,000 in total assets. Furthermore, more than 40 per cent of companies had no employees and 50 per cent of them had between 1 and 9 employees in 2021. The average company had just under 4 employees.[94] Information from the annual reports of these companies suggests that they have progressively disposed of employees before the actual bankruptcy. One reason why many companies did not have any employees may also be that they were relatively new. Around 25 per cent of companies filed their first annual report after 2018.

Chart 37. Small loans among bankrupt companies

SEK



Note. The chart on the left shows the total and average amount owed to credit institutions according to companies' annual reports in 2021. The chart on the right shows the average operating profit/loss before depreciation, interest and tax of the companies in the sample. The grey range refers to operating profit in the 25th to 75th percentile.

Sources: Dun & Bradstreet (Serrano Database) and the Riksbank.

Smaller companies tend to have little or no loans. This is illustrated by the fact that the bankrupt companies had on average just under SEK 1 million in loans from credit institutions, while the median company had no loans at all in 2021. In total, these companies had almost 6.5 billion in loans from credit institutions in 2021 (see Chart 37). The amount of loans among these companies has been too small to have a significant impact on the banks.

The companies had been financially weak for a long time

Some companies that went bankrupt during the sample period already started to deteriorate after the 2008 global financial crisis. Of the bankrupt companies, the average company has made an after-tax loss since the financial crisis. Behind these figures

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

there is a small proportion of companies that made relatively large losses. However, the fact that a company makes a loss after tax in an individual year or a few years is not necessarily a problem if their cash flow has been positive. The average company in our sample had a positive operating profit until 2016 (see Chart 37).

If a company is temporarily making a loss, it can use available cash or sell liquid assets, or raise liquidity through loans or capital injections from shareholders. Many of the bankrupt companies appear to have had this opportunity, as the average cash liquidity was above 100 per cent until 2020.[95] In addition to having loans from credit institutions, they also had other types of debt that contributed to their high indebtedness. The debt-to-equity ratio amounted to 145 per cent on average among the bankrupt companies in 2021 and the median was 260 per cent. This was significantly higher than the median debt-to-equity of the remaining companies, which amounted to 60 per cent. The debt-to-equity ratio is strongly related to the equity-to-assets ratio, i.e. the proportion of a company's assets financed by equity. The equity-to-assets ratio was significantly lower among the bankrupt companies compared to the remaining companies.

In addition, the companies that went bankrupt had difficulty paying their borrowing costs. The average interest coverage ratio was -2 for the bankrupt companies, while the remaining companies had an interest coverage ratio of 3.6 in 2021. Overall, many of the bankrupt companies appear to have been in a relatively weak position before inflation and interest rates started to rise, judging by their financial position in 2021.

Data indicate that there may be many vulnerable companies

To assess whether there are vulnerable companies that could cause banks to have higher loan loss provisions, all limited liability companies have been categorised according to their financial position in 2021. Table 3 categorises the remaining companies according to their debt-to-equity and interest coverage ratios. An interest coverage ratio below 1 means that the company is unable to pay its interest costs with the income from its current operations. An interest coverage ratio close to 1 indicates that the company may be financially strained.[96] A company is therefore considered vulnerable – be more likely to become insolvent – if it has an interest coverage ratio below 1.5 and a debt-to-equity ratio above 200 per cent.

Of the more than 545,000 remaining companies, around 116,000 had loans from at least one credit institution. In total, these companies had SEK 2,202 billion in loans from credit institutions in 2021.[97] Among the remaining companies with loans, more than 29,000 companies, or 25 per cent, were classified as vulnerable (see red field in Table 3). In total, these accounted for almost 35 per cent of the loans, corresponding

95 The gradual increase in the debt-to-equity ratio may be a result of some companies making losses for several years and using equity to cover this.

96 Companies with an interest coverage ratio below 1 need to use liquid funds, sell assets, take out new loans or issue new shares to pay their interest costs and avoid insolvency.

97 This can be compared to the SEK 2,593 billion that represents the banks' total outstanding corporate lending in Sweden in December 2021 according to Statistics Sweden's financial market statistics.

to SEK 760 billion. To the group of vulnerable companies, we also add companies that had a negative interest coverage ratio but a low debt-to-equity ratio, as they could face liquidity problems if their income has not improved since 2021. This includes loans corresponding to just over SEK 355 billion, just over 16 per cent of total loans (see yellow field in Table 3).

In total, there were 38,000 companies classified as vulnerable. These accounted for just over half of the total loans from credit institutions, corresponding to just over SEK 1,120 billion. The largest share of vulnerable companies' loans belongs to companies operating in the property and services sectors. An important limitation of the analysis is that it does not take into account the fact that a large share of the companies belong to a corporate group. Of the 38,000 companies, 40 per cent belonged to a corporate group and these accounted for 90 per cent of the loans, i.e. SEK 1,024 billion in loans. The proportion of vulnerable companies may therefore be overestimated in the analysis, as other parts of the group may be in a stronger financial position and better able to pay the group's overall borrowing costs, including those of the individual subsidiary.

Table 3. Proportion of remaining companies that are vulnerable

	Low debt-to-equity			**High debt-to-equity**		
	ICR<0	**ICR (0, 1.5)**	**ICR>1.5**	**ICR<0**	**ICR (0, 1.5)**	**ICR>1.5**
Number of companies	9,081	2,111	36,529	19,255	9,758	39,119
Share of companies, per cent	*8*	*2*	*32*	*17*	*8*	*34*
Loans from credit institutions (SEK million)	355,055	59,981	252,812	450,955	312,701	770,216
Share of total loans, per cent	*16*	*3*	*11*	*20*	*14*	*35*

Note. The interest coverage ratio (ICR) is calculated as operating profit/loss in relation to financial expenses. The debt-to-equity ratio is calculated as the ratio of total adjusted liabilities to adjusted equity.

Sources: Dun & Bradstreet (Serrano Database) and the Riksbank.

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