SVERIGES RIKSBANK

Financial Stability

2023:1

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 17 May and 31 May 2023. The report is available on Sveriges Riksbank’s website, www.riksbank.se, and takes into account developments up to and including 26 May 2023.

The Riksbank and financial stability

A prerequisite for the economy to function and grow is that the financial system functions well.[1] This means that the system must be able to mediate payments, convert savings into funding and manage risks, and also be resilient enough to continue to do so. However, the system is sensitive, as its central parts 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 by borrowing from each other, obtaining funding on the same markets or having similar operations. Problems that arise at one participant, in a market, or in a system, can therefore quickly spread, both directly and via concerns that similar participants might also encounter problems.

A crisis in the financial system risks leading to significant economic and social 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 occurs, the state may 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.[2] A central task for the Riksbank is therefore to oversee the financial system. This includes identifying risks of severe disruptions 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 to the financial infrastructure in Sweden. Twice a year, in this report, the Riksbank gives an account of its analyses and assessments of the stability and efficiency of the financial system.

The Riksbank also has important tasks related to the provision of liquidity in the event of a financial crisis. To counteract a severe disruption in 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.

[1] The financial system refers to banks and other financial agents, as well as financial markets and the infrastructure in the form of technical systems required to make payments and exchange securities. The system also includes the financial regulatory framework in the form of legislation, regulation and other standards.

[2] The Sveriges Riksbank Act (SFS2022:1568).

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IN BRIEF – The Riksbank's stability assessment

High inflation and higher interest rates are challenging the stability of the global financial system. Over the last year, several crisis-like events have taken place, where authorities have taken action to avoid a possible financial crisis. Not least this spring when problems arose for banks in the United States and Switzerland. This illustrates that vulnerabilities can be exposed when economic conditions change rapidly and unexpectedly, and that it can be difficult to predict where problems may arise. The risks in the global financial system are elevated.

Overall, the Swedish financial system has functioned well also during times of turmoil on global financial markets. However, there are vulnerabilities that have long characterised the Swedish economy that now entail challenges. This applies not least to the highly-indebted property companies and the banks' large exposures to the sector, as well as high household indebtedness.

Property companies are under pressure from the higher interest rates, partly because their funding costs have increased and partly because the value of their properties is falling. The Riksbank considers it important that these companies continue to make adjustments to strengthen their balance sheets. The banks also have an important role to play, both by maintaining the supply of credit to viable companies and within the framework of their lending, by requiring property companies to take measures to reduce their financial risks.

Household indebtedness and households' short interest-rate fixation periods may entail risks for the stability of the macroeconomy and in an unfavourable scenario for financial stability. 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 amortisation requirement and mortgage cap.

In light of the prevailing risk outlook, and given the banks' important role in the supply of credit, it is particularly important for them to safeguard their relatively favourable starting position. The Riksbank considers that the major banks should endeavour to have margins in addition to the capital and liquidity requirements, for example by showing restraint with large dividends and share buybacks. This would also safeguard confidence among their financiers.

Both Swedish and foreign stability authorities must be vigilant of developments and be ready to take action under their respective mandates, should the situation require it. As a central bank, the Riksbank has, for example, the possibility of providing liquidity assistance. However, it is important for market participants to realise that they cannot always count on support measures.

There are also other vulnerabilities in the Swedish financial system that need to be addressed. Bankgirot is a central element of the Swedish payment system. In light of the withdrawal by P27 of its application for a clearing license, it is of the utmost importance that the banks take their responsibility for Bankgirot and ensure that the payment infrastructure functions well. The Riksbank has deepened its oversight and is carefully monitoring how the banks manage Bankgirot.

1 Overall stability assessment

High inflation, higher interest rates and large movements in the financial markets

The rise in global inflation since 2021 has been the strongest and fastest in decades. Monetary policy has therefore been tightened rapidly. This has been necessary, as low and stable inflation is a prerequisite for good economic development. Despite some moderation in recent months, inflation remains high in many parts of the world. However, there are good reasons to believe that inflation will fall in the period ahead, even though there is uncertainty about how quickly it will happen.[3]

At the same time as inflation and interest rates have risen, prices of various real and financial assets have fallen, yield spreads between riskier assets and government bonds have widened and volatility in several markets has increased, not least in the fixed income market. International financial conditions have thus become considerably tighter.

High inflation and higher interest rates lead to challenges for the stability of the global financial system. The past year has also seen various events that have caused significant turbulence and large price movements in the financial markets. The most recent example is the widespread market turmoil in the spring when Silicon Valley Bank (SVB) in the United States suffered confidence and liquidity problems and ultimately failed to meet its commitments to customers. The problems then spread rapidly to other niche US banks such as Signature Bank and First Republic Bank and also to the Swiss bank Credit Suisse. Other examples include last autumn's liquidity crisis in UK pension funds and the problems in the electricity derivatives market in connection with soaring electricity prices.[4] In all these cases, governments, central banks and other authorities took strong action to avoid the problems spreading and a possible financial crisis.

The risks in the financial system are elevated

The crisis-like events that arose were partly the result of large price movements that were difficult for market participants to anticipate. This applies, for example, to the development of electricity prices at the end of 2021 and for much of 2022. But they were also caused by vulnerabilities that built up as many participants became more inclined to increase their risk-taking during the period of low inflation and low interest rates. The fact that interest rates are rising from low levels is not necessarily a problem in itself, but could instead contribute to lower vulnerabilities in the long run. But

[3] See *Monetary Policy Report*, April 2023, Sveriges Riksbank.

[4] For a description of the problems in the electricity derivatives market, see *Financial Stability*, 2022:2, Sveriges Riksbank, see also M. Andersson (2023), "The liquidity crisis in British pension funds from a Swedish perspective", January, *Staff memo*, Sveriges Riksbank.

vulnerabilities can be exposed when economic conditions change as quickly and unexpectedly as they have done. One clear example is SVB, which had invested a large part of its deposits in long-term fixed-rate bonds, thereby taking a significant interest rate risk. At the same time, the bank did not have sufficient internal risk procedures to manage these risks.[5] As interest rates rose, losses were incurred on the bonds, and contributed to undermining depositors' confidence in the bank and to a very rapid bank run.

The Swedish financial system was also affected by the market turbulence in the spring. As with several foreign banks, it became more difficult and more expensive for the major Swedish banks to obtain funding via the bond markets. On the whole, however, the Swedish banks have coped well. In the United States, the unrest that arose in financial markets as a result of major problems in several US banks contributed to tighter credit conditions. So far, there have been no signs that lending among Swedish banks has been affected by the banking turmoil to any appreciable extent, but experiences from it may nevertheless lead to a reduction in future risk appetite.

The fact that the Swedish financial system has withstood the recent turbulence does not mean that there are no risks. There are several known vulnerabilities that have long characterised the Swedish economy. This applies not least to the banks' large exposure to the highly indebted commercial property companies. Liquidity on the bond markets is limited, and some markets have also functioned poorly at times, not least the Swedish corporate bond market, which is of great importance to property companies. In addition, the Swedish banking system itself is large and concentrated. It is also highly dependent on the confidence of both the international capital markets and depositors. Households' high indebtedness, combined with their short interest fixation periods, also entails risks, especially for macroeconomic stability but in a bad scenario also for financial stability.

Current events show that it may be difficult to identify in advance all of the vulnerabilities that may come to light when the economic situation changes as rapidly as it has done now. The sequence of events may moreover be rapid and turbulent, and problems may spread between agents and markets.

Property sector pressured by higher interest rates

For a long time, the Riksbank, Finansinspektionen and international organisations such as the International Monetary Fund (IMF) and the European Systemic Risk Board (ESRB) have drawn attention to the stability risks associated with the property sector in Sweden. Property companies are the banks' largest borrower group among non-financial companies. It is also the corporate group that has increased its borrowing the most in Sweden in recent years – mainly by issuing bonds and certificates. Many property companies are under pressure from the higher interest rates, partly because their funding costs have increased and partly because the value of their prop-

[5] See *Review of the Federal Reserve's supervision and Regulation of Silicon Valley Bank*, April 2023, Federal Reserve.

erties is falling. However, there are significant differences in the sector, and companies with lower loan-to-value positions are better placed to cope with higher interest rates.

As interest rates on the bond market have risen sharply since the beginning of 2022, property companies have raised new loans from the banks, rather than issuing new bonds. At the same time, several property companies have adapted their financial situation to reduce their borrowing needs by reducing their investments, selling properties, suspending or reducing dividends and, in some cases, issuing new shares. However, as a large share of their bond loans will mature in the coming years, their borrowing needs remain high. Although the banks have chosen to meet a large part of the increased demand for liquidity from property companies so far, it is uncertain how much of their future bond maturities the banks will be able to take over.

Against this background, the Riksbank considers it important that property companies continue to make the necessary adjustments to strengthen their balance sheets. Otherwise there is an increased risk of a process where pressurised property companies are forced to sell large volumes of property quickly in an unfavourable economic situation. This could lead to a faster and larger downward adjustment of property values with negative consequences for financial stability. To reduce the risk of such a process, the banks have an important role to play, both by maintaining the supply of credit to viable companies and within the framework of their lending, by requiring property companies to take measures to reduce their financial risks.

Higher living costs reduce household margins

Higher living costs as a result of broad price increases and higher interest rates are forcing many households to make significant adjustments. The vast majority of mortgagors are expected to be able to service their loans, but some households may find it more difficult. The risk of payment problems is higher for consumer loans, which in turn could lead to increased loan losses, especially for consumer credit companies. Although many households are able to service their loans, the high level of indebtedness combined with short interest-rate fixation periods makes households sensitive to interest rate changes. This means that rising interest rates have a rapid and significant impact on their interest expenditure. This has contributed to a slowdown in consumption, which is expected to continue to decline.[6]

Housing prices have fallen by just over 13 per cent. According to the Riksbank, they are expected to fall further, so that they are around the same as before the pandemic. The Riksbank considers that such a fall in prices would not have major negative consequences for the household sector as a whole. However, if prices were to fall more and faster than expected, the decline in consumption could be greater. This in turn could lead to more extensive profitability problems in the corporate sector and to a sharp increase in bankruptcies, which could increase loan losses in the banking sector. In a bad scenario, financial stability could be adversely affected.

[6] See *Monetary Policy Report*, April 2023, Sveriges Riksbank.

Extensive problems in foreign banks have highlighted risks for the Swedish banking sector

The confidence and liquidity problems that arose for the US bank SVB, and then spread to a number of different banks, have highlighted a number of risks and point to several lessons that are also relevant for Swedish banks. There were several reasons for the problems. For example, there were deficiencies in risk management and supervision that allowed SVB to take significant interest rate risks, which ultimately led to depositors losing confidence in the bank. But there were also other factors that contributed to the process. Most of the deposits at SVB were not covered by the US deposit insurance, while a large part of the deposits came from a single sector. New technologies have made it easier for depositors to withdraw their money quickly and at the same time, social media helps to spread information very quickly. This means that deposits can be more volatile than before. A further aspect illustrated by the events is how problems in a small bank can spread quickly to other banks if investors see similarities between the banks. In a short time, therefore, a problem in a small bank can turn into a problem of a more systemic nature.

Swedish banks, like banks in general, are exposed to liquidity risks due to their short-term funding and long-term lending. This means that the Swedish banking system as a whole is dependent on the confidence of both depositors and other financiers. There are a number of smaller banks, mainly consumer credit banks, which, like the American niche banks, are mainly funded by deposits. However, these deposits are largely covered by the deposit insurance scheme and come mainly from households. Among the major Swedish banks, which have more diversified funding, the proportion of insured deposits is not as high, which is because the deposits are larger as they come from companies to a greater extent.

Deposits in the banking sector have decreased somewhat recently after having increased sharply during the pandemic. Swedish households and companies have moved a small part of their deposits from on-demand deposit accounts to savings accounts, to get a higher interest rate on their deposits. Households have also to some extent moved deposits from larger to smaller banks. The net interest income of the major Swedish banks has certainly strengthened rapidly over the past year, as lending rates have risen more than deposit rates. However, competition between the banks means that they need to weigh the need to retain their deposits against the increased costs of offering higher deposit rates.

The major Swedish banks fulfil the requirements for liquidity buffers (LCR) and net stable funding (NSFR). This is important as it improves the conditions for managing various liquidity problems. However, the experience from the banking turmoil during the spring has shown that liquidity can disappear quickly even when regulatory requirements are met. To reduce the risk of such problems, banks need to maintain their confidence by also having stable profitability, ample capital, a low-risk credit portfolio and low loan losses. They also need to manage their interest rate risks based on the requirements set by Finansinspektionen.

The poorer economic development with increased bankruptcies means that loan losses for Swedish banks may increase significantly. There is considerable uncertainty regarding developments in the property sector. The Riksbank's stress tests of the banks' exposures to Swedish companies indicate that loan losses on corporate lending may be significant in a scenario where macroeconomic development will be considerably weaker than in the Riksbank's forecast from April. The major Swedish banks are expected to be able to manage the losses in such a scenario, but their ability to issue new loans could deteriorate.

Given the heightened risk situation, the Riksbank considers that the major banks should endeavour to have significant margins in addition to the capital and liquidity requirements, for example by showing restraint with large dividends and share buybacks. This would also safeguard confidence among their financiers.

Authorities need to closely monitor developments

The economic policy framework introduced after the crisis of the 1990s is contributing to the Swedish economy, in several respects, being in a relatively good position to cope with strains. But in the light of the prevailing heightened risk situation, there is reason for stability authorities, both in Sweden and abroad, to be vigilant and ready to take action if necessary. As a central bank, the Riksbank has the opportunity to provide liquidity support if necessary, and the tools that can be used to safeguard financial stability have been clarified in the new Sveriges Riksbank Act. However, it is important that market participants realise that they cannot always count on support measures, since it is not within the Riksbank’s task to facilitate for individual participants who have taken excessive risks.

Global regulations need to be reviewed

The banking turbulence during the spring has shown several developments that could have an impact on how global regulatory standards for banks should be designed in the future. Factors that had a clear impact on the course of the crisis were, for example, the volatility of deposits, the scope of the deposit insurance scheme, contagion risks even from smaller banks and the banks’ management of interest rate risks. It has also become clear that the relatively untested global resolution framework has not been applied as intended. The main purpose of the resolution framework is to enable authorities to better manage large systemically important institutions that are encountering difficulties, without using public funds. When Credit Suisse ran into acute problems, however, the Swiss authorities chose not to use this framework, but instead contributed to a solution whereby UBS took over Credit Suisse, partly by issuing public guarantees, partly by supplying liquidity.

Against this background, it may be necessary to review whether global regulatory standards need to be adapted. It is important to learn from the problems that arose to make the regulatory framework more robust in the future. Many of these issues will therefore be discussed intensively in the future.

One way of making the regulations more robust in the near term would be for the EU and other jurisdictions to implement Basel III, in a full, timely and consistent manner. This is particularly important in the EU negotiations that are now in the final stages, and where there are proposals for significant deviations. Deviating from Basel III will reduce confidence in the European banking sector. Harmonised global regulations benefit the economy and financial stability in all countries, including Sweden.

The regulatory framework for non-bank financial institutions, such as funds and insurance companies, also needs to be strengthened. These institutions have come to form an increasingly large and more important part of both the Swedish and the global financial systems, and account for a large proportion of the capital supply to the real economy. In many cases, they are also linked to the banking sector. Unlike the banking sector, 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 ESRB.

Climate change is another issue with a major bearing on the financial sector. Financial institutions should incorporate risks linked to climate change in their analyses and in their internal governance and reporting, to ensure that they can meet their obligations. This requires the availability of accurate and comparable climate-related information. It is therefore positive that a global standard for sustainability reporting is now being developed, and that requirements for transparency will increase with new EU regulations.[7, 8] The Riksbank considers that the Swedish banks should already report their exposures to climate risks in accordance with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations.

The corporate bond market is characterised by a lack of transparency and insufficient liquidity

The current economic situation illustrates the importance of resilience. It is therefore important that both market participants and authorities work to address the vulnerabilities in the Swedish financial system. One example is the Swedish market for corporate bonds, which has long been characterised by a lack of transparency and insufficient liquidity. Larger and more homogeneous bond issues can contribute to changing this. The Riksbank has therefore supported the development of a standard for a Swedish benchmark and calls on major Swedish companies and banks that support companies in the issue process to commit themselves to issuing bonds in accordance with the standard. So far, there has been limited willingness from the participants, as only small volumes of such bonds have been issued.

[7] See *The Riksbank's climate report 2023*, January 2023, Sveriges Riksbank.

[8] The European Parliament and the Council have reached a political agreement on a new Corporate Sustainability Reporting Directive (CSRD) that will revise and strengthen the current rules.

A large part of the outstanding Swedish corporate bonds is owned by the Swedish corporate bond funds. They remain sensitive to liquidity risks, as they invest in relatively illiquid assets and offer daily redemptions to their unitholders. This is shown not least by recent liquidity stress tests by Finansinspektionen and the IMF.[9] A major responsibility lies with the fund management companies themselves to quickly reduce liquidity risks in these funds. Some measures have been taken. For example, at the request of the Finansinspektionen, fund management companies have reviewed and documented the need for necessary measures in the area of liquidity and implemented most of the measures required to meet the requirements and recommendations made by Finansinspektionen.[10] But this is not enough and more action needs to be taken. This primarily means that the companies need to increase cash balances in the funds or limit the redemption possibilities for unitholders to better manage the liquidity risks in the funds' assets. It also remains important to emphasise to unitholders that holdings are not liquid under all market conditions and that immediate redemptions are therefore not always possible. Fund management companies should also urgently apply to introduce swing pricing for these funds, which is a liquidity management tool that has recently been made available to Swedish funds in legislation.[11]

Banks urgently need to take responsibility for and decide on the future infrastructure for payments

The payment infrastructure in Sweden is facing major changes. For some years now, the banks have down-prioritised Bankgirot's operations as a result of their plans to replace Bankgirot with P27. However, P27 has now withdrawn its application for a clearing licence. Bankgirot is a central part of the Swedish payment system and it is therefore of the utmost importance that the banks now promptly take responsibility, including deciding on a realistic plan that ensures a well-functioning payment infrastructure in both the short and long term. For example, the plan should include an analysis of the technical development and investments that will be required for Bankgirot in the coming years. In addition, the Riksbank considers it important that at least one independent board member is appointed to Bankgirot's board, in line with international principles for financial infrastructure systems.[12] This would make it more likely that board decisions are based on a holistic analysis. The Riksbank has deepened its oversight and is carefully monitoring how the banks manage Bankgirot.

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[9] See A. Crosta, and C. Sandström, "Stress tests of fund liquidity risks", *FI-analysis no. 37*, November 2022, Finansinspektionen, and *Sweden: Financial System Stability Assessment (FSAP)*, Country Report No. 2023/113, March 2023, International Monetary Fund.

[10] See *Follow-up of FI's requirements and recommendations regarding good liquidity management in funds*, memorandum, July 2022. Finansinspektionen.

[11] See the glossary for an explanation of the term swing pricing.

[12] See *Principles for Financial Market Infrastructures*, April 2012, Committee on Payments and Market Infrastructures — International Organization of Securities Commissions.

Sweden is behind the rest of the world in the transition to transaction-based reference rates

An important question of confidence in the Swedish financial system concerns the transition toward transaction-based reference rates. A reference rate serves as a benchmark in the pricing of financial contracts and is therefore an important building block in the financial markets. For confidence in reference rates to be strong, they need to be based on actual transactions. The Riksbank has therefore developed a fully transaction-based reference rate, SWESTR, but its use is still modest and Sweden is lagging behind other countries in the transition to transaction-based reference rates. Market participants and authorities have a joint responsibility for ensuring that Sweden's reference rates are relevant and comply with international standards, and a great deal of work remains to be done here. To promote increased use of SWESTR, the Riksbank has organised various discussion forums with market participants since autumn 2022. In parallel with this, the Swedish Bankers' Association runs a working group that is developing recommendations for how a transition from the shortest maturity in STIBOR to SWESTR should be implemented.[13]

The deteriorated geopolitical situation is leading to increased cyber risks

The security situation deteriorated significantly in 2022 and the likelihood that key players in the financial system will be affected by cyberattacks, for example from state-sponsored threat actors, has increased. Recently, the number of DDOS attacks has also increased against several sectors, including the financial sector. So far, these attacks have not had any impact on financial stability but, as the financial sector has been one of the targets, this shows the importance of private agents and stability authorities working systematically to strengthen their ability to prevent, detect and manage cyber risks. This is also important from a contingency perspective. Agents need to take action on their own but cooperation is also important, both between different private agents but also between sectors of society. The National Cyber Security Centre can play an important role in this respect and the proposal that the National Defence Radio Establishment be given primary responsibility for the centre could create good conditions for the centre's further development.[14]

Reforms for better functioning housing and mortgage markets are important

Finansinspektionen's borrower-based macroprudential measures, such as amortisation requirements and the loan-to-value limit, have contributed to households amortising more and taking out smaller loans than would otherwise have been the case.

[13] The shortest reference rate is called STIBOR Tomorrow-Next (T/N).

[14] See opinion editorial by U. Kristersson et al. (2023), 27 April, "DN Debatt."FRA får ta over ansvaret för Sveriges cybersäkerhet" [National Defence Radio Establishment may take over responsibility for Sweden's cyber security] and National Cyber Security Centre. Retrieved 27 April 2023, NCSC driver pilotprojekt med finansiella aktörer [NCSC runs pilot project with financial agents].

This has reduced their interest-rate sensitivity. The Riksbank considers it important to retain these measures to contribute to sound lending and to strengthen the culture of amortisation over time. These measures should not be changed in the event of an economic downturn or be used generally to compensate households for various cost increases. However, it is positive that the amortisation requirement has been designed with a certain amount of flexibility in which mortgagors can be granted exemptions on special grounds, for example if they suffer a loss of income and encounter problems in repaying their loans.

The accumulation of household debt has long gone hand in hand with rising housing prices. In order for the housing market to function better in the long term, a broad review of housing and tax policy is needed, which could include a review of interest deductions, property tax and the regulatory framework for new housing production. This would also be positive for the stability of the macroeconomy and the financial system. In the near term, it may be more relevant to review measures that would not drive up costs for households but which would, for example, promote increased new housing production.

A lower cost for early repayment of loans would give households greater incentives to choose loans with longer interest rate fixation periods and help to make the household sector as a whole less interest-rate sensitive. It is therefore important that the inquiry into a change in interest rate differential compensation actually leads to a change. Further measures may also be required to more actively influence households' choice of interest-rate fixation period, but this would require a further analysis of the advantages and disadvantages of possible models.

Better statistics and registers could contribute to better decision-making and better-designed measures

If information had been available on how assets and liabilities are distributed among households, the conditions would have been better for assessing how their consumption, savings and ability to pay would be affected in the current economic situation. Such information would thus have improved the opportunities to analyse the risks associated with household indebtedness. Against this background, the inquiry's proposal for new statistics on households' assets and liabilities is very important and 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.[15] More detailed statistics would also make it possible to better analyse the extent to which different measures fulfil their purpose.[16]

In addition, there is currently no register that shows all of a borrower's debts, which may result in, for instance, the credit assessment for consumer loans being based on

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

[16] See the Riksbank's consultation response to the report *En ny statistik över hushållens tillgångar och skulder* [New statistics on household assets and liabilities] (SOU 2022:51), April 2023.

insufficient data. A system that shows all of the borrower's debts would significantly improve the conditions for a fairer credit assessment and could thus contribute to households granted consumer loans also being able to repay them. The Riksbank therefore finds it positive that an inquiry has been set up to investigate the need for a national debt register.[17] The Riksbank also considers that a central register of tenant-owned property should be introduced, as this would make tenant-owned apartments safer collateral. In this way, the housing market would function better and transparency would increase. The Riksbank therefore supported the inquiry's proposal that a central tenant-owner register for all of the country's tenant-owned apartments should be introduced.[18]

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

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

2 Vulnerabilities and risks in the financial system

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

Sweden is a small and open economy with considerable foreign trade and other cross-border operations. Swedish banks and companies also finance themselves in global financial markets. **The macrofinancial situation abroad** is therefore of considerable significance for the real economy and financial stability in Sweden.

If profitability declines in the **corporate sector** and funding becomes more difficult or expensive for companies, financial stability may be affected, for instance, by an increase in loan losses for banks. This is underlined by the fact that Swedish banks are particularly exposed to property companies that are sensitive to both falling revenues and rising interest rates.

The banks' largest borrower group is **households**, and their indebtedness has increased in parallel with rising housing prices over a long period of time. Developments in the household sector and the housing market are therefore significant for both the real economy and financial stability.

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

Other financial institutions, including mutual funds and insurance companies, manage assets that are almost as large as those of the entire Swedish banking sector. Their actions can amplify market movements and spread risks to other asset types and agents.

The financial infrastructure refers to systems in which payments and transactions with financial instruments are made. The stability and availability of these systems is a prerequisite for safe and efficient payments.

2.1 The macrofinancial situation abroad

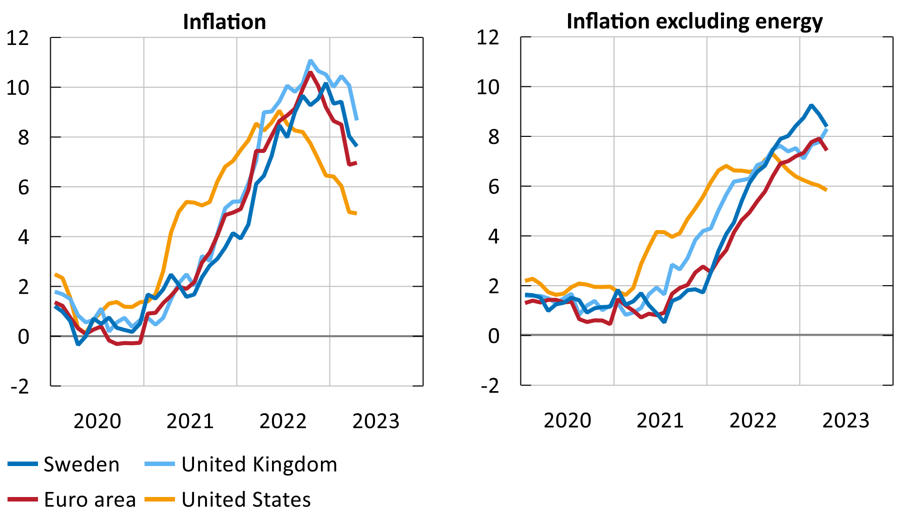
High inflation has led to a rapid and severe tightening of global financial conditions. At the same time, several shocks have occurred over the past year, causing considerable stress in various markets. The causes include a lack of transparency and regulation, as well as the build-up of vulnerabilities during the period of very low interest rates. Financial markets are still characterised by considerable uncertainty, which is reflected, among other things, in high volatility. The high interest rates may lead to risks materialising in various sectors and particularly highly indebted sovereign states.

High inflation and weak growth abroad

Economic and financial developments abroad are characterised by considerable uncertainty. The global increase in inflation during much of 2021 and 2022 was stronger than for many decades. And although inflation has fallen somewhat in many countries, underlying inflation has not fallen as significantly, something that illustrates the broader foothold gained by inflation in many countries (see Chart 1).

Chart 1. Consumer prices in various countries and regions

Annual percentage change



Note. Refers to the CPIF for Sweden, the HICP for the euro area and the CPI for the United Kingdom and the United States. Outcomes at monthly frequency.

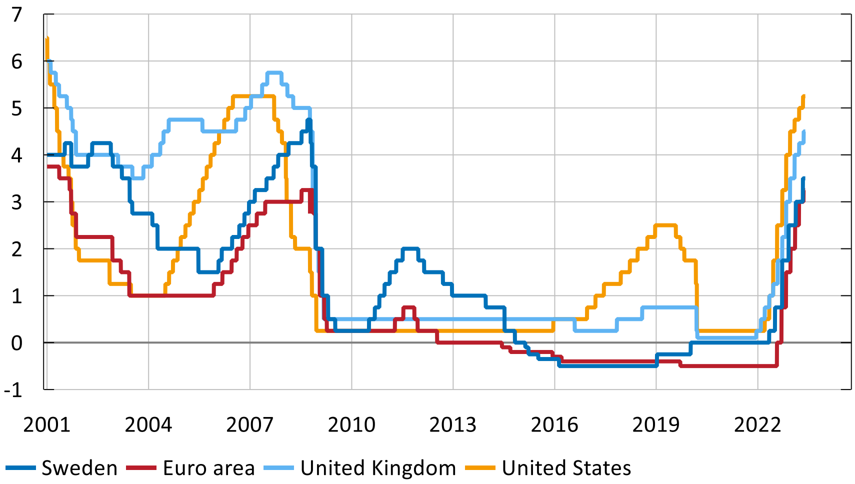
Sources: Eurostat, Statistics Sweden, UK Office for National Statistics and US Bureau of Labor Statistics.

To manage inflation, central banks around the world have raised their policy rates to levels not seen since before the 2008-2009 financial crisis (see Chart 2). In parallel with the rising interest rates, financial conditions have been tightened significantly, both in the United States and in the euro area.[19] In the United States, banks have continued to tighten credit conditions for both companies and households, and this is expected to continue throughout the year. The tightening has been particularly evident in the commercial property sector. According to statistics from the European Central Bank (ECB), the net change in banks' lending conditions is the strongest recorded since 2008.

Global growth has slowed, especially when compared to the strong recovery after the pandemic (see Chart 3). This is true in all the economically important regions of the world.

Chart 2. Policy rates in various countries and regions

Per cent



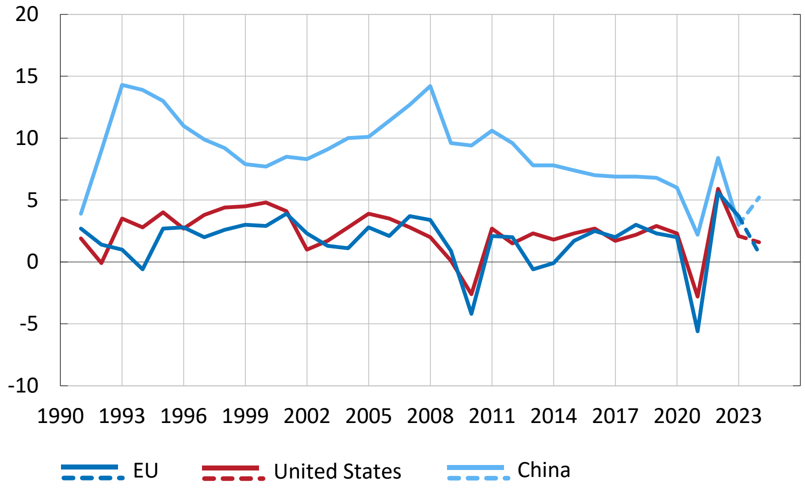
Note. For the euro area, the ECB's deposit rate is shown.

Source: Macrobond.

[19] See *The April 2023 Senior Loan Officer Opinion Survey on Bank Lending Practices*, April 2023, the Federal Reserve Bank. For the euro area, see *The euro area bank lending survey - First quarter of 2023*, April 2023, European Central Bank.

Chart 3. GDP growth in various regions

Annual percentage change



Note. Dashed lines refer to the 2023 forecast from the IMF World Economic Outlook, April 2023.

Source: IMF.

Interest rate risks can materialise in several different areas

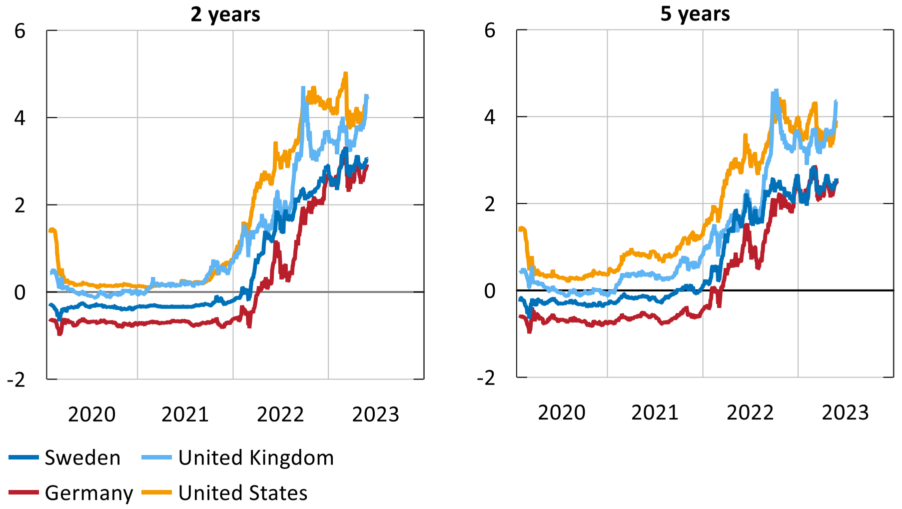
Both short- and long-term government bond yields have risen to significantly higher levels than in 2021 (see Chart 4). This poses a challenge, not least for some highly indebted emerging economies. More developed economies may also face problems if the sustainability of public finances starts to be questioned, something that became clear during the euro crisis triggered in late-2009. Although measures have been taken since then to reduce the vulnerability of euro area countries to higher interest rates, such as the extension of the average duration of government borrowing and the introduction by the EU of a facility for financial support to countries (Recovery and Resilience Facility)[20], the average public debt ratio is significantly higher now. The increase corresponds to between 20 and 25 per cent of GDP.[21]

[20] The Recovery and Resilience Facility provides financial support to EU countries hit relatively hard by costs caused by the pandemic. One of the purposes is to increase resilience and facilitate green and digital transition.

[21] The average government gross debt in the EU corresponded to 84 per cent of GDP at the end of 2022 (euro area 91.6 per cent). Between 2000 and 2007, the corresponding figure was around 65 per cent of GDP both in the EU overall and in the euro area (see the European Commission's spring forecast 2023 - statistical appendix and Eurostat: Government finance statistics).

Chart 4. Government bond yields in various countries and regions

Per cent



Note. Refers to benchmark bonds with different maturities.

Source: Macrobond.

The longer duration of member states' borrowing gives them some, albeit temporary, protection against higher interest costs. For lenders, the extended duration will be a burden when yields rise, as the value of the bond holdings falls. The lenders are mostly domestic banks.[22] At the same time, they face a likely deterioration in the credit quality of their loan portfolios due to the weak economic developments. This poses a risk of the link between central government and bank in certain EU member states again creating turmoil in the markets.

During the long period of low interest rates, agents other than banks have become increasingly vulnerable to rapid interest rate hikes. One example is the property sector, and in particular the commercial property sector, in which companies are often highly leveraged. Property prices have started to fall both in Europe and in the United States (see the section "Vulnerabilities and risks in the corporate sector"). The fall in prices need not be negative, but a sharp fall may threaten financial stability. This is a risk highlighted by, among others, the ESRB, the Federal Reserve and the IMF.[23]

Other financial agents, such as fund managers and insurance companies, are also in some cases highly indebted and are taking substantial liquidity risks. With the current level of interest rates, these agents having to quickly sell assets cannot be ruled out,

[22] In connection with central banks' quantitative easing of monetary policy, they have become the single largest holders of outstanding public debt instruments in many countries. Domestic banks' share of the holdings has decreased somewhat over time, but they still have a substantial share of the holdings. In Italy, for example, domestic banks' holdings have decreased from the peak level of 31 per cent in 2013 to 26 per cent in 2022 (see S.M.A. Abbas, L. Blattner, M. De Broeck, A. El-Ganainy, M. Hu (2014) "Sovereign debt composition in advanced economies: a historical perspective", *Working paper* No. 14/162, International Monetary Fund).

[23] See *Recommendation of the European Systemic Risk Board of 1 December 2022 on vulnerabilities in the commercial real estate sector in the European Economic Area (ESRB/22/9),* 2023*,* ESRB.

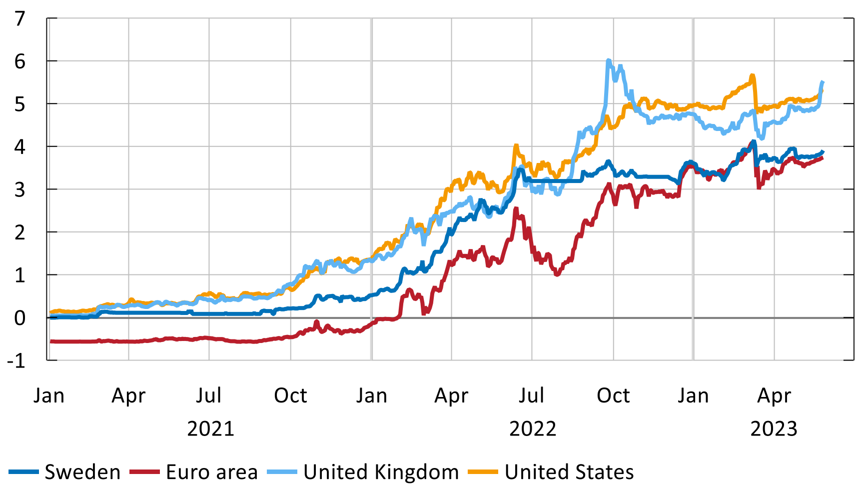
something which may add to the existing market turmoil. This risk is highlighted by the ESRB and the IMF, among others.

Volatility and uncertainty continue to characterise the financial markets

Financial markets are currently characterised by uncertainty about the future path of inflation and policy rates. Over the past year, market participants have gradually revised their views on when policy rates are expected to peak (see Chart 5). In connection with the turbulence following the bank collapses in the USA and Switzerland, expectations on many central banks, including the Federal Reserve and the ECB, were adjusted downwards. Now, the market expects that some central banks will only raise their policy rates once or twice more, and that others are finished with rate hikes.

Chart 5. Market expectations for peak policy-rate levels

Per cent



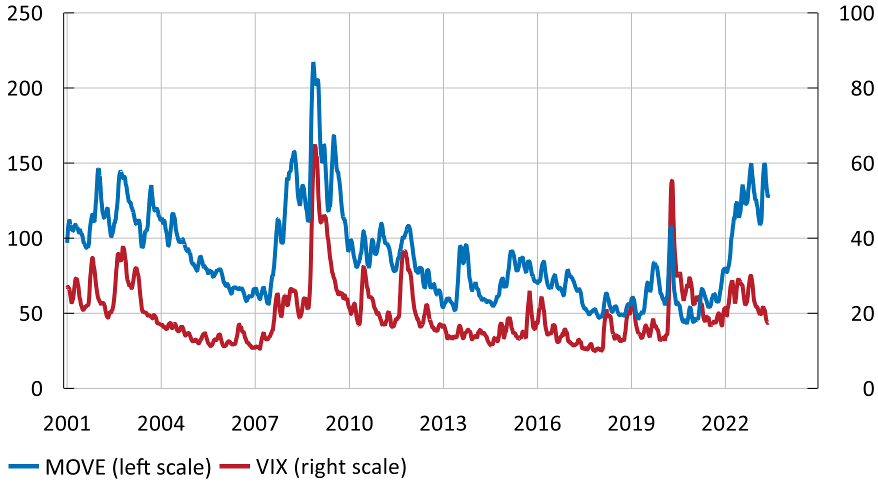
Note. Market expectations according to the pricing of outstanding futures contracts (RIBA futures, ESTR futures, SONIA futures and Fed fund futures respectively).

Source: Macrobond.

Unexpected events and general uncertainty may lead to new episodes of financial turbulence. Uncertainty about interest rate developments and their consequences is well illustrated by the expected volatility of US government bonds, which has not been so high since the 2008-2009 financial crisis (see Chart 6). On the US equity market, expected volatility has declined slightly from the higher levels earlier this year, but remains higher than in the years before the coronavirus pandemic. European financial markets are also showing signs of elevated stress. For example, the ECB's financial stress index for Europe is higher than its long-term average (see Chart 7). Volatility and stress in various financial markets affect agents exposed to these markets in different ways. For example, it may be a question of them making losses or being faced with sudden margin requirements and resulting liquidity need. It is therefore a risk of stress spreading further in the financial system.

Chart 6. MOVE and VIX index

Index, 30-day moving average

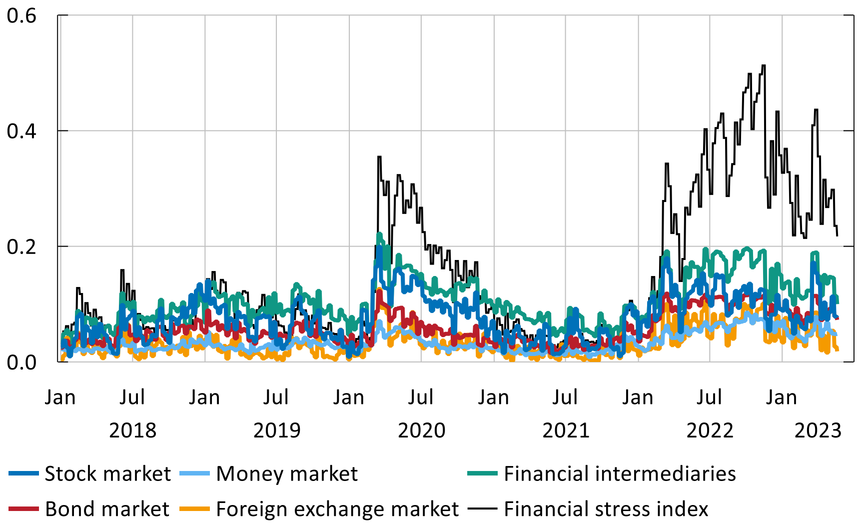


Note. The Merrill Lynch Option Volatility Estimate (MOVE) Index is a measure of the expected volatility of US government bonds on the bases of options prices. Volatility Index (VIX) shows the expected volatility on the US stock market based on options prices.

Source: Macrobond.

Chart 7. European financial stress index

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



Note. The European Stress Index is published in the ESRB's Risk Dashboard, among other places. The stress level at a specific date is expressed as a value between zero and one, in which one signifies a historically high stress level and zero signifies a historically low stress level. See Holló et al., CISS - A composite indicator of systemic stress in the financial system, Working Paper Series no. 1426, March 2012, ECB.

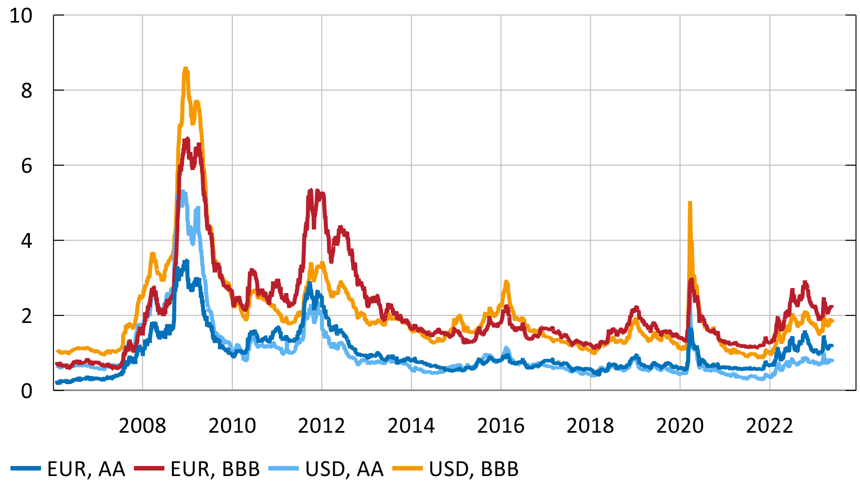
Source: Macrobond.

Continued investor uncertainty may affect companies and banks

The uncertain financial situation is also reflected in increased uncertainty among investors about the situation of companies. For example, the spread between corporate and government bond yields has widened over the past year. This indicates that companies' funding costs have risen faster than general interest rates have done. This is true of both the European and the US market (see Chart 8). The increase is particularly pronounced for companies with lower credit ratings. Yield spreads increased in particular in the autumn of 2022, as interest rates rose, but also increased slightly in the context of the spring's substantial turmoil in the banking market. Although the risk premiums are not remarkably high in a historical perspective, they nevertheless imply that investors have revised their view of credit risk.

Chart 8. Yield spreads for European and US corporate bonds

Percentage points



Note. Refers to 5-year corporate bonds and yield spreads towards corresponding government bond yields.

Source: Macrobond

Investors' assessments of the consequences of the current economic situation vary across regions and sectors. This is illustrated, for example, by the fact that since last autumn the equity market has performed much more strongly in the euro area than in the United States (see Chart 9, left). Interest-rate sensitive sectors, such as the property sector, have performed significantly worse than broader benchmark indices. The fintech sector is another sector that has been affected relatively substantially. This is reflected not least in the fact that the share value of listed fintech companies globally has fallen by around 25% since the beginning of 2022.[24] As risk appetite has decreased, investors have turned to less risky sectors and it has become more difficult for fintech companies in general to raise capital.[25]

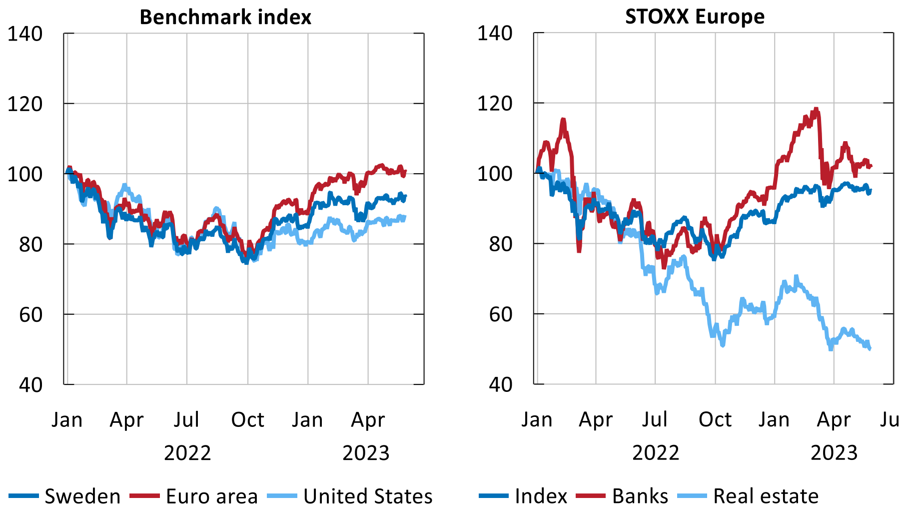
[24] See Chart A.1 in the Chart Appendix.

[25] In 2022, investments in fintech companies globally fell by 46 per cent compared to the previous year. See, for example, *Fintech Report*, fourth edition, February 2023, Swedish Fintech Association.

For some time, bank stocks outperformed broad equity indices, as banks were judged to benefit from the increase in interest rates. But the bank failures in the United States and Switzerland caused bank stocks to fall back relatively sharply in March 2023 (see Chart 9, right). The pressure on banks is illustrated by the fact that the Federal Reserve established a new facility (Bank Term Funding Program) to help banks with their liquidity situation. The Fed's Primary Credit facility was also utilised to a considerable extent, even more than during the outbreak of the global financial crisis in 2008.[26]

Chart 9. Equity indices

Index, 1 January 2022 = 100



Note. STOXX is an equity index for the euro area, "Real estate" and "Banks" are sub-indices.

Source: Macrobond.

[26] See, for example, *Global Financial Stability Report - Safeguarding Financial Stability amid High Inflation and Geopolitical Risks*, April 2023, International Monetary Fund.

2.2 Vulnerabilities and risks in the corporate sector

Within the corporate sector, the highest indebted property companies pose the greatest risk to financial stability. They are facing gradually higher interest costs, which challenges their future debt-servicing ability. So far, the decline in reported property values has been limited, but they will probably fall further. Several property companies have taken measures to strengthen their balance sheets, but more measures are required going forward. Companies in other sectors have also been negatively affected by the current situation, but as their loans are smaller, the stability risks are more limited.

Reduced profitability among companies

Since the end of 2022, profitability among companies has deteriorated (see Chart 10). This is linked to a decline in demand as rising inflation and interest rates have weakened households' purchasing power. The weak krona has also contributed to the fall in profitability for some companies, especially in the trade sector. Forward-looking indicators, such as weak inflow of orders and low expectations of future sales volumes, suggest that the slowdown will continue.[27]

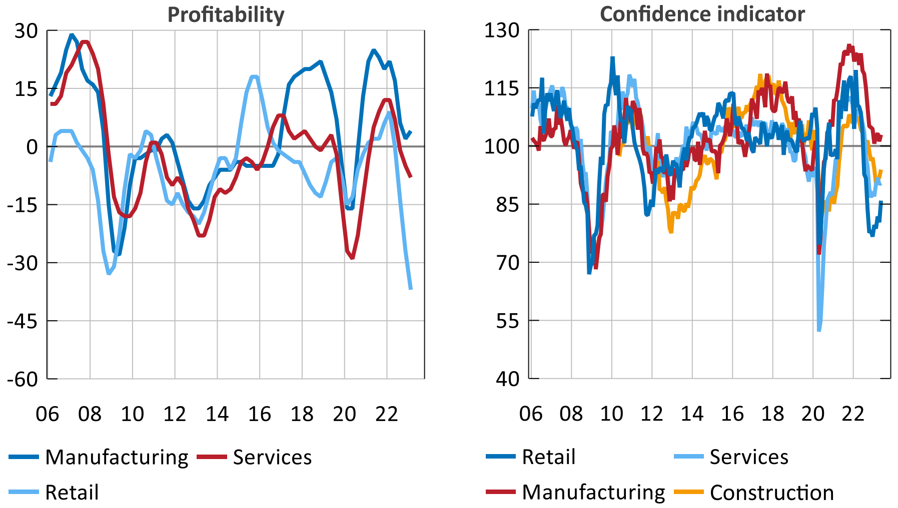
However, sentiment in the business sector and companies' views on the extent to which they have been affected by inflation and interest rates differ across industries (see Chart 10).[28] Manufacturing companies are more positive than consumer-oriented companies and this is particularly true of companies in the automotive industry. Industrial order books remain at a high level, but new orders have fallen, suggesting a slowdown as global demand has weakened. Consumer-oriented companies in the services and retail sectors, among others, are under more pressure and are generally experiencing declining sales volumes as customers' purchasing power erodes. This is partly reflected in the fact that the sales volume of the retail trade is now about 8 per cent lower than March 2022. This development is expected to continue to reduce the profitability of many companies going forward, particularly those that also have large loans.

[27] See *Swedish Economy Report*, March 2023, National Institute of Economic Research.

[28] See *The Riksbank's Business Survey*, February 2023, Sveriges Riksbank.

Chart 10. Profitability and business confidence in Sweden

Net figures, index



Note. Left: Companies' assessment of current profitability, seasonally adjusted and smoothed. Right: 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.

Source: National Institute of Economic Research.

Construction sector faces challenges and new housing production declines

Companies in the construction sector are particularly affected by the current situation and have to deal with several challenging circumstances, including higher costs for materials and loans, as well as reduced demand for new housing and lower housing prices. This has made it even more difficult for them to balance the budget when building both tenant-owned and rented housing. Balancing the budget for rental housing has also been made difficult as a result of the abolition of government investment aid and two judgements in the Svea Court of Appeal that limit the scope for rent increases.[29] However, demand among construction companies for civil engineering works and infrastructure remains relatively good.

Overall, the challenges faced by the construction sector have resulted in a reduction in the number of new housing starts since the beginning of 2022 by more than 30 per cent and this number is expected to fall sharply going forward (see Chart 11).[30] This is expected to lead to more bankruptcies among construction companies. However, these companies are only responsible for 2 per cent of corporate loans and therefore

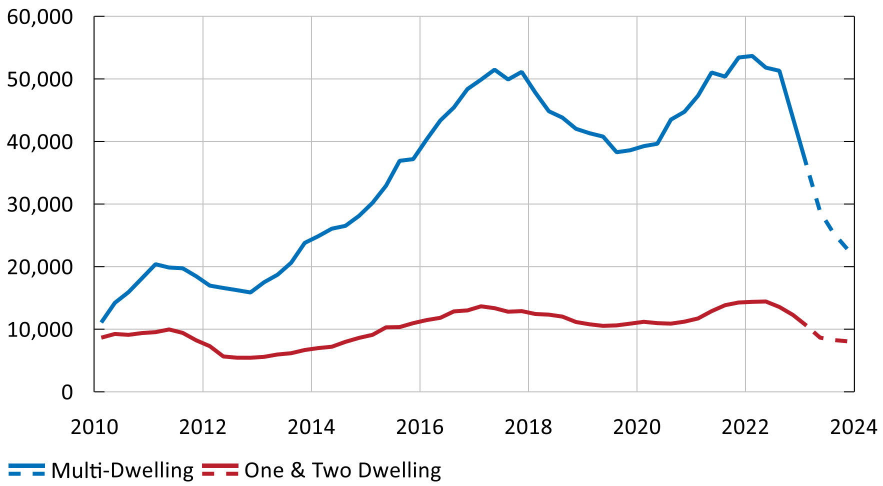
[29] See cases *ÖH 14593-20* and *ÖH 1854-21*, Svea Court of Appeal. The restriction on increasing the rent for some newly built rental homes have caused the value of these homes to be written down.

[30] Housing investment is expected to decrease by just over 40 per cent by the second quarter of 2024 compared with the peak in 2022, see *Monetary Policy Report*, April 2023, Sveriges Riksbank. The National Board of Housing, Building and Planning (Boverket) predicts that the number of new housing starts will decrease by just over 50 per cent by the end of 2023, see *Boverket's Housing construction indicators*, December 2022, Boverket.

do not in themselves pose a threat to financial stability. On the other hand, this development may lead to a reduction in employment in the construction sector and lower economic growth. It may also affect profitability in other sectors, not least among companies that produce and supply input goods to construction companies.

Chart 11. Number of housing starts in Sweden

Number



Note. The dashed lines represent Boverket's forecast from December 2022.

Sources: Statistics Sweden and the Swedish National Board of Housing, Building and Planning (Boverket).

Corporate bankruptcies expected to increase in 2023

In early 2023, bankruptcies among limited companies have continued to increase (see Chart 12). Bankruptcies have increased most among companies in the trade, construction and restaurant sectors. In connection with the pandemic, many companies, partly in these sectors, had access to fiscal policy support measures and some therefore managed to avoid bankruptcy.[31] But in step with significantly higher costs, at the same time as support measures have been phased out or have needed to be repaid, some companies may have gone bankrupt. Although bankruptcies have increased relatively quickly, they have done so from low levels.

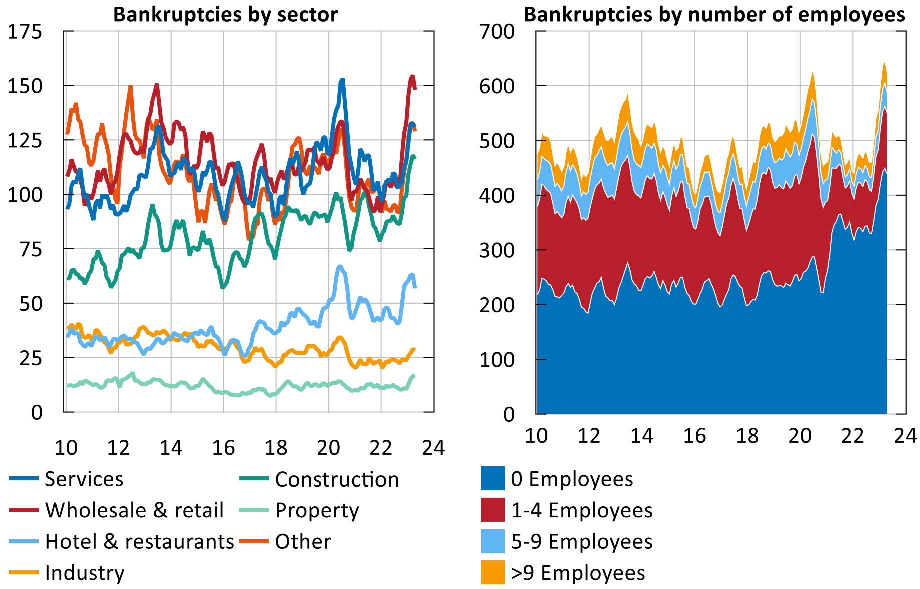
Since the end of 2020, it has become increasingly common for companies to have no employees when they go bankrupt.[32] In addition to the fact that more sole proprietorships may have gone bankrupt, this may also be due to the fact that these companies have been performing poorly for a long time and therefore may have had time to lay off all employees before going bankrupt. Information on the liabilities of companies that go bankrupt is difficult to access, but given that banks' loan losses have so far been limited, it is reasonable to assume that the companies that have recently filed

[31] See *Financial Stability*, 2021:2, Sveriges Riksbank.

[32] Almost 70 per cent of the limited companies that went bankrupt between September 2022 and February 2023 had zero employees and just over 17 per cent had 1-4 employees.

for bankruptcy have had small or no loans. However, these companies may have had other types of liabilities to a greater extent, such as unpaid invoices, taxes or wages.

Chart 12. Development of bankruptcies among limited companies in Sweden
Number



Note. Refers to limited companies in various sectors that have gone bankrupt, rolling 6-month average. "Other" refers to companies in energy, transport, education, healthcare, culture and other companies for which there is no data.

Source: Statistics Sweden.

Weak demand and high costs pose a risk for further deterioration of companies' financial conditions. More companies may thus find it difficult to fulfil their commitments to lenders, suppliers and landlords, which suggests that bankruptcies will continue to increase during the remainder of 2023.[33] This may lead to both increased unemployment and lower demand for commercial premises. Companies with high loan-to-value ratios (LTVs) and a low interest coverage ratio are particularly vulnerable in the current situation. With the exception of property companies (see section below), these are relatively few vulnerable companies, most of which are active in the trade sector, construction, hospitality and other parts of the service sector. Companies with high LTVs and low interest coverage ratios together accounted for just under 5 per cent of companies' total loans from banks in 2021.[34] While these loans may lead to credit losses for banks, they do not in themselves pose a threat to financial stability.

[33] According to the Deloitte/SEB *CFO survey* in spring 2022, many CFOs across industries also consider the likelihood of companies experiencing payment difficulties or going bankrupt to be high and at about the same levels as at the start of the pandemic.

[34] According to data from limited companies' annual reports 2021 from Bisnode. Refers to limited companies with a LTV above 70 per cent and an interest coverage ratio below 1.5.

Corporate borrowing growing at a slower pace

In recent months, total corporate borrowing has slowed significantly, after having increased rapidly in 2022 (see Chart 13). The slowdown is broad-based and applies to all sectors. In 2022, it was mainly corporate borrowing from banks that grew rapidly, while borrowing via the securities market grew much more slowly.[35] This can be explained by the fact that many property companies have faced lower demand among investors on the securities market and that they do not want to issue new bonds at the interest rates offered. Instead, property companies have mostly refinanced their loans at banks.[36] On the other hand, companies in other sectors, and especially larger companies in the service and trade sectors, have been able to increase their borrowing relatively smoothly both via banks and via the securities market.

According to the Economic Tendency Survey, more companies are finding it more difficult to obtain loans.[37] In addition, rising interest costs and reduced willingness to invest in the service and construction sectors are expected to lead to borrowing continuing to grow increasingly slowly. European banks, from which some Swedish companies borrow, have also gradually tightened their lending conditions, making it more difficult for companies to obtain new loans.[38] But even if borrowing is expected to decrease overall, the development will probably vary between different sectors. For example, manufacturing companies are expected to need to continue borrowing for their long-term investments, such as the electrification of the transport sector and the transition to green energy production.

[35] Banks refer to lending by Swedish monetary financial institutions (MFIs) and the securities market refers to commercial paper and bonds.

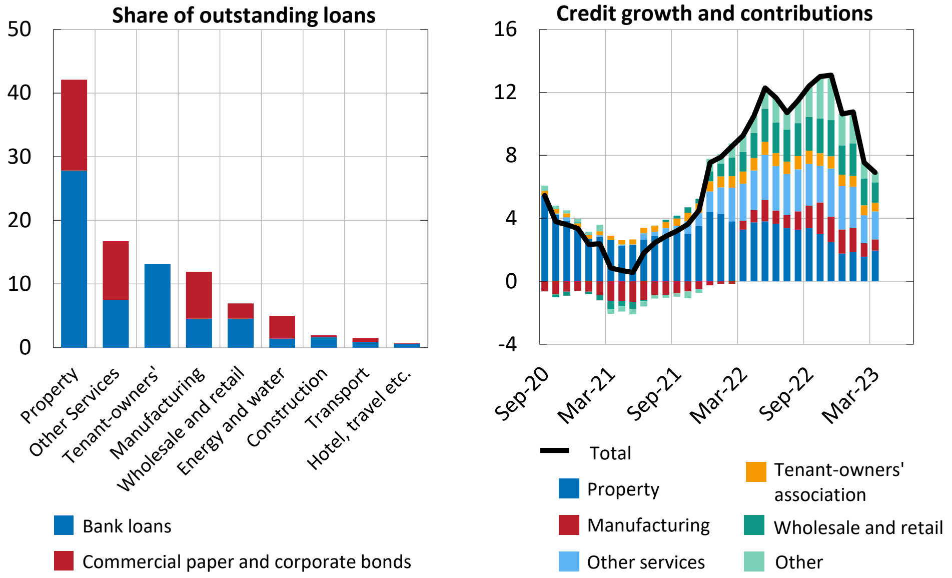
[36] See Chart A.2 in the Chart Appendix.

[37] Other surveys, such as Almi's lending indicator and Deloitte/SEB's *CFO survey*, also indicate that it has become increasingly difficult for companies to obtain new loans.

[38] According to the ECB's *Bank Lending Survey* from May 2023. According to the Federal Reserve's May 2023*'s Senior Loan Officer Opinion Survey*, credit conditions in the United States have also continued to tighten in the first quarter of 2023. This development is expected to continue during the year.

Chart 13. Corporate loans by sector

Per cent, annual percentage change, contribution in percentage points



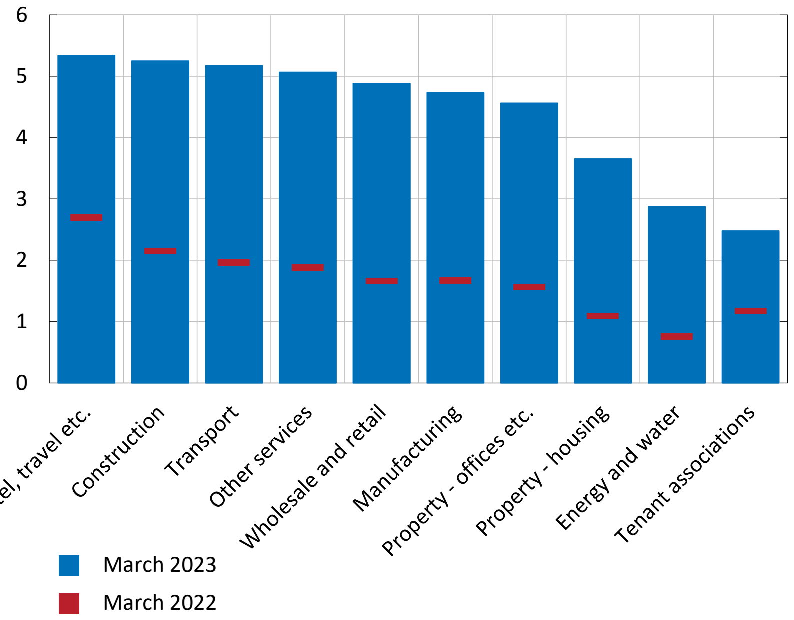
Note. Left: Percentage of outstanding loans for non-financial companies from Swedish monetary financial institutions (MFIs) and outstanding commercial paper and bonds as of March 2023. Right: Annual percentage change in corporate loans from MFIs and issued commercial paper and corporate bonds. The bars refer to each sector's contribution in percentage points. "Other" refers to the transport, hotel, restaurant, construction and energy sectors. BRF denotes tenant-owner housing associations. Loans from MFIs are not adjusted for reclassifications and issued securities are not adjusted for currency impact.

Source: The Riksbank (KRITA and SVDB).

As companies generally have short interest-rate fixation and loan-to-maturity periods on their loans, they are affected relatively quickly when interest rates rise. In one year, corporate interest rates on all outstanding bank loans have increased from an average of around 1.5 per cent to 3.9 per cent. As the interest-rate fixation period differs somewhat among companies, the increase varies among different sectors (see Chart 14). For example, the increase has been lower for tenant-owner housing associations, companies in the energy sector and property companies with housing, while it has been higher for companies in the trade, transport and service sectors. Interest rates on new bond loans have also increased, particularly for property companies. Looking at all companies, interest costs have risen faster than operating incomes.[39] The rising interest costs have been most challenging for the sectors with the largest loans, such as property, service and trade companies.

[39] Looking at all companies, whether they have loans or not, their interest coverage ratio - net operating income in relation to interest expenditure - has decreased from 24 to 17 between the fourth quarter of 2021 and the fourth quarter of 2022. An interest coverage ratio of 1 means that companies are just able to pay their interest costs.

Chart 14. Interest rates on outstanding bank loans in different corporate sectors
Per cent



Note. Refers to the volume-weighted average interest rate for all outstanding bank loans as of March 2023 and March 2022.

Source: The Riksbank (KRITA).

Property companies' demand for bank loans has increased

Since summer 2022, it has been relatively expensive for property companies to refinance their loans in the bond market. Even though risk premiums are now lower than the highest levels in 2022, property companies have largely refinanced their bond loans by taking out new bank loans. Property companies' borrowing from banks is therefore increasing rapidly and in March the annual rate amounted to just under 9 per cent. However, property companies have not only borrowed from Swedish banks, but also from other Nordic banks.

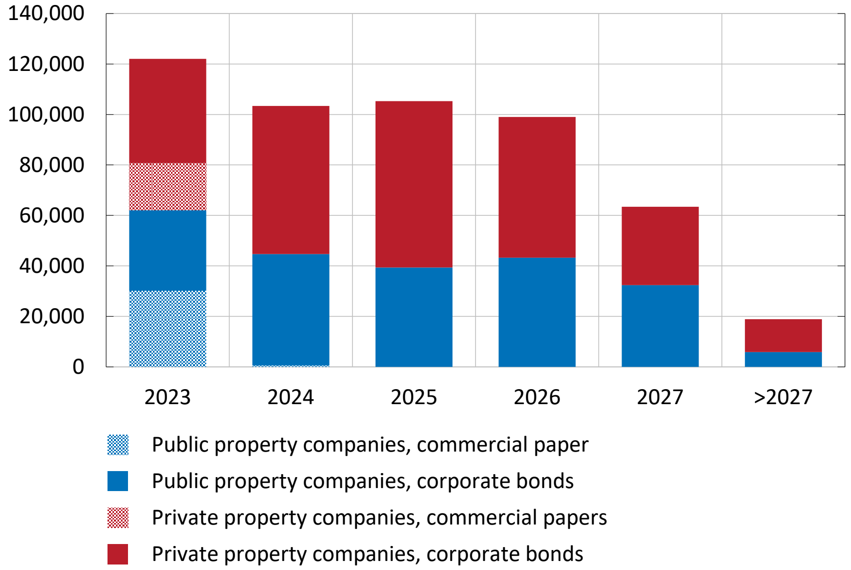
The fact that property companies have been able to turn to banks to refinance their loans has meant that they have not had to pay as high interest rates as they would have done if they had issued new bonds, which has also given them more time to respond to current challenges.[40] For remaining bond investors, more bank loans instead of new bonds are not entirely unproblematic. A higher proportion of bank loans increases the downside risk for existing bond investors.[41] In addition, the possibility for property companies to issue new bonds is impaired.

[40] Banks can often offer a lower interest rate as they, unlike lenders in the bond market, lend against collateral.

[41] There is an order of priority for who gets paid first if a company goes bankrupt. Unlike banks, which lend against the collateral in the property to be financed, bond investors instead provide unsecured loans. Lenders who have collateral have priority over lenders who have made unsecured loans.

Chart 15. Commercial paper and bond maturities of property companies

SEK million



Note. Refers to maturities of the property companies' commercial paper and bonds as of March 2023.

Source: The Riksbank (SVDB).

Continued high interest rates in the bond market are expected to contribute to property companies' continued high demand for bank loans. During the remainder of 2023, bonds with a nominal value of approximately SEK 75 billion will mature, and between 2024 and 2026, bonds corresponding to approximately SEK 100 billion per year will mature (see Chart 15). Although banks have sufficient capital buffers to meet such a borrowing requirement, it is uncertain to what extent they will do so. This will probably depend on the adjustments property companies themselves make to reduce their loans (see the section "Vulnerabilities and risks in the banking system").

Property values will probably continue to fall going forward

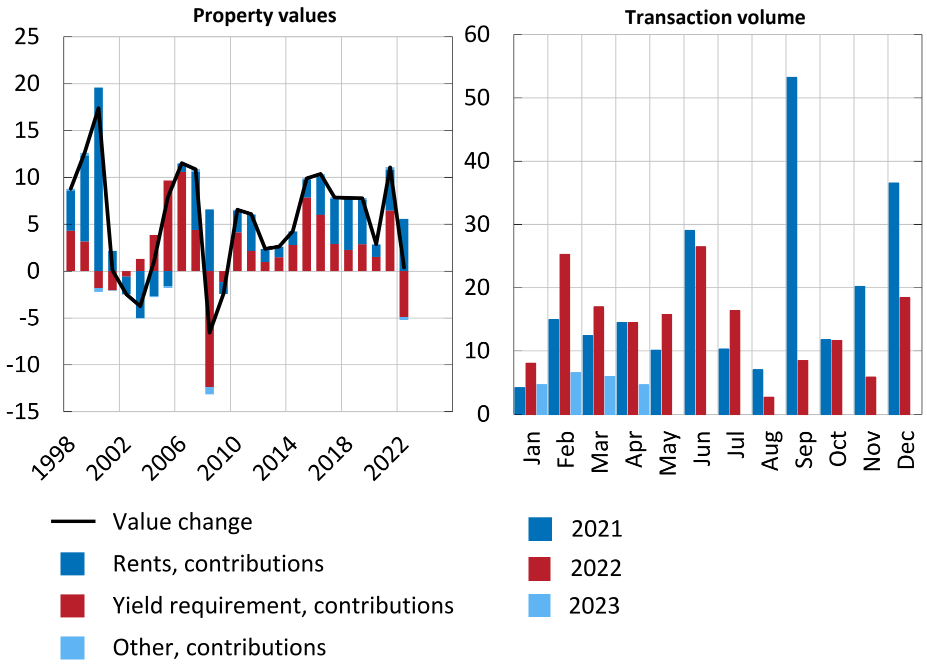
Despite the rapid rise in interest rates, property companies did not start to adjust the value of their properties downwards until the end of 2022 by an average of just over 3 per cent. As property companies wrote up their property values at the beginning of 2022, the development for the full year was unchanged (see Chart 16). At the start of 2023, the downward adjustments of property values have also been relatively small, around 2 per cent. These relatively limited downward adjustments may partly be due to the higher rents obtained by property companies via the CPI indexation, which has compensated for the rising required rates of return.[42] In Europe, where rental contracts are indexed to inflation to a lesser extent, property values have fallen slightly more than in Sweden. On average, property values in Europe fell by 7 per cent between the second and fourth quarters of 2022. The decline was mainly driven by the UK, where property values fell by just over 16 per cent. In the United States, property

[42] The higher interest rates mean that property buyers generally demand a higher return on their property investments, which, all else being equal, means lower property values.

values have also fallen since the summer of 2022, and the greatest fall in value has been for office properties, which also face major challenges with rising vacancy rates and falling rental growth.[43]

Chart 16. Decomposed development of property values and transaction volume

Annual percentage change, SEK billion



Note. Left: Annual percentage change in commercial property values, all segments and the bars refer to contributions to the annual rate in percentage points. Right: Volume of property transactions per month.

Sources: Catella MSCI Inc. and the Riksbank.

There are also other factors that may explain the limited value write-downs in Sweden. Transactions in the property market act as a guide for the valuation of other similar properties. As there have generally been few transactions since mid-2022, property values do not fully reflect the rise in interest rates so far. Probably, required rates of return will gradually continue to increase as more transactions are carried out. It is therefore the assessment of the Riksbank that property values will continue to fall in 2023. In addition, rents for premises are not expected to increase as quickly as before, which is partly a consequence of weaker economic activity. This will probably also lead to more premises being vacant in the future, which would imply both lower rental income and lower property values.

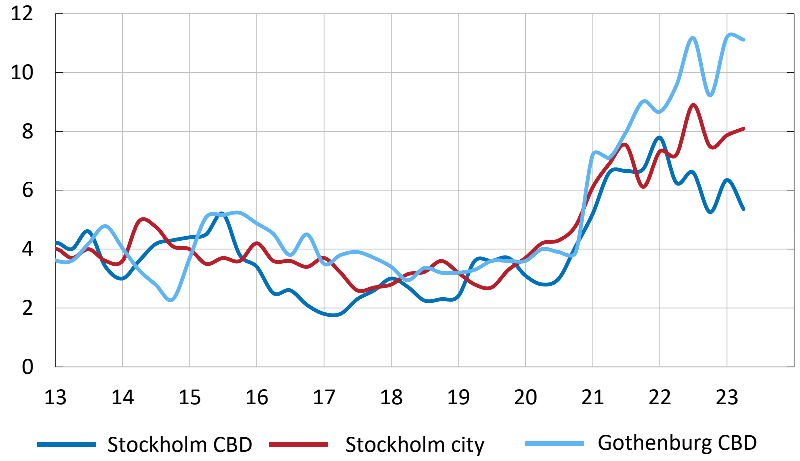
More office premises have already become vacant as companies continue to adjust their office space to accommodate more remote working and to reduce their costs (see Chart 17). As companies have preferred to move to more attractive areas, however, the vacancy rate has recently decreased somewhat in the most central parts of

[43] According to data from MSCI (MSCI Data Notice). See also *Financial Stability Report*, May 2022, Board of Governors of the Federal Reserve System.

Stockholm. In central Gothenburg, the vacancy rate is instead continuing to rise for outdated office properties, which is due to relatively many new offices being completed in a short space of time.

Chart 17. Vacancy rates for offices

Per cent



Note. Central Business District (CBD) refers to the most centrally located office properties in the inner cities of Stockholm and Gothenburg respectively. Share of vacant office premises (vacancy rate) refers to the proportion of vacant office space in relation to total office space. Includes office premises that are empty or will become empty as of 31 March 2023.

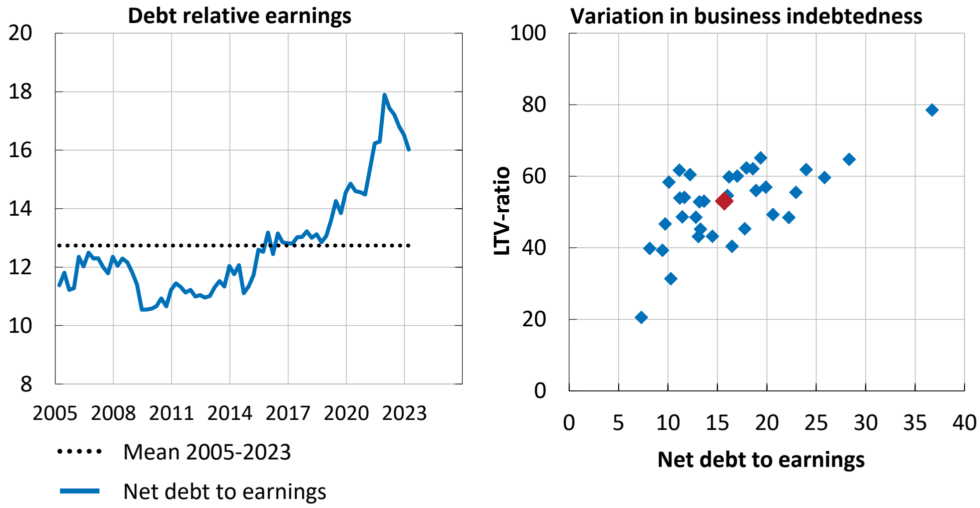
Source: CityMark Analys.

Higher funding costs put pressure on interest coverage ratios

Property companies have been increasing their debts in relation to their operating income for a long time. Although the ratio decreased somewhat in 2023, it remains at a high level (see Chart 18). This means property companies' cash flows are more sensitive to rising interest rates than previously. At the same time, their LTVs have decreased somewhat during the long period of rapidly rising property values. In general, however, there are significant differences between property companies, where some have a relative high LTV (see Chart 18).

Chart 18. Debts of property companies relative to property value and earnings

Ratio, per cent



Note. Left: Volume-weighted ratios for 34 commercial property companies, where the sample of companies varies somewhat over time. Right: 34 larger property companies as of the first quarter of 2023 and the red diamond refers to the volume-weighted average. LTV on the y-axis refers to total interest-bearing loans in relation to total property values in per cent. The ratio on the x-axis refers to net debt in relation to operating income. Net debt refer to total interest-bearing loans minus cash items.

Sources: Catella, Sedis and the Riksbank.

The period of low and falling interest rates contributed for a long time to a rise in property companies' interest coverage ratios, but as interest rates have risen over the past year, they have fallen for many.[44] Since many larger property companies have loans where the interest rate is fixed via credit agreements or interest-rate derivatives, the entire rise in interest rates has not yet affected them. Nevertheless, their average interest costs have risen relatively quickly. For a sample of 34 larger property companies, the average volume-weighted interest rate has risen from around 1.5 per cent in early 2022 to 2.7 per cent currently. The interest rate differs between the property companies in the sample, ranging from 1.9 per cent to 5.8 per cent. The increased interest costs have led to a decrease in their volume-weighted average interest coverage ratio from 4.3 to 3.0.

Property companies must take further measures to reduce their loans

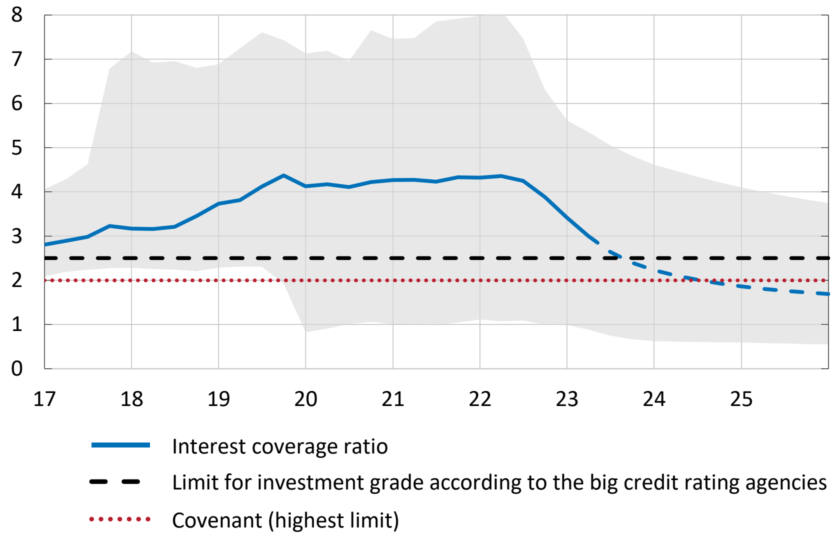
Since market interest rates are expected to continue to rise somewhat in 2023 as fixed loans mature, property companies' average interest costs will continue to rise

[44] The interest coverage ratio refers interest expenditure in relation to operating income (net operating income minus costs for central administration). An interest coverage ratio of 1 means that company is just able to pay its interest costs.

and their interest coverage ratios will decrease.[45] To illustrate how property companies' interest coverage ratios may develop going forward in a scenario where they do not reduce their loans, the Riksbank has made projections of their net operating income and interest expenditure.[46] The calculations assume that the policy rate will rise in accordance with the Riksbank's latest forecast to 3.65 per cent in 2023 and then remain at that level until mid-2025.[47] If the pass-through of market interest rates to property companies' interest expenditure is assumed to be the same as in 2022, the calculations show that the volume-weighted average interest coverage ratio will fall from 3.0 to just under 2.2 at the end of 2023 (see Chart 19).[48]

Chart 19. Interest coverage ratio of larger property companies

Ratio



Note. Refers to the volume-weighted interest coverage ratio (ICR) for a sample of 34 property companies, where some companies are added over time until Q1 2023. 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.

[45] According to the annual reports of 34 major property companies from 2022, 35 per cent of their loans will be affected by higher market interest rates within one year. In addition, 20 per cent of their total loans mature within one year.

[46] The calculations assume that rental revenues will increase as a result of inflation-indexed rental agreements. Management costs are assumed to increase in percentage terms as much as rental revenues. For property companies that mainly manage rental housing, net operating income is assumed to increase by 4.5 per cent in 2023 and for those that mainly have other properties, net operating income is assumed to increase by 8 per cent in 2023. In 2024, net operating income for all property companies increases by 2 per cent. The calculations also assume that the companies' interest-bearing loans are unchanged.

[47] See the Riksbank's forecast for the policy rate in *Monetary Policy Report*, April 2023, Sveriges Riksbank.

[48] As property companies gradually adjust their interest-rate fixation and loan-to maturity periods, the interest-rate pass-through will in reality not be the same over time. The risk premium on loans to property companies is assumed to be constant.

There are significant differences between companies, and for several, the interest coverage ratio falls to low levels despite the cautious nature of the assumptions forming the basis of the calculations. A few property companies would have an interest coverage ratio below the limit value set by credit-rating agencies for the higher investment grade credit-rating category. This increases the risk of the rating being downgraded, although other financial ratios and factors also inform such a decision. A few individual companies have already been given a lower credit rating. A downgrade, so that the company no longer belongs to the higher rating category, could increase the cost of both new and some existing bond loans and would significantly reduce the long-term access of such companies to the bond market.

Some property companies also risk having an interest coverage ratio of less than 1.5, which would mean that they are in breach of the financial conditions set by banks and some bond investors in their loan agreements.[49] In addition, some smaller property companies focused on the production of new properties risk having an interest coverage ratio of around 1, which means that they may have problems paying their interest. If a borrower breaches financial conditions, the lender has the right to renegotiate the terms of the loan or demand full repayment of the loan early. If this happens – or if the interest coverage ratio falls below 1 – it can cause serious problems for property companies and lead to loan losses for lenders.

These calculations have been carried out for a sample of large property companies whose loans consist of approximately 70 per cent of loans from foreign banks, direct loans from investment funds and insurance companies and bonds. A smaller share thus consists of bank loans from Swedish banks. The majority of the Swedish banks' property exposures are loans to many other smaller property companies, which on average have a slightly worse initial position than those included in our calculations.[50] Unlike larger property companies, these do not tend to use different types of interest-rate derivatives.[51] This means that they are affected more quickly by higher interest rates and can experience problems earlier and cause loan losses for banks.

Overall, there are significant differences between property companies and how their interest coverage ratios may develop going forward. For some squeezed property companies, the decline may be particularly substantial. However, the decline in the interest coverage ratio, as well as in other financial ratios, can be mitigated if they take measures to strengthen their balance sheets and thereby reduce their interest costs. Many property companies have already taken measures, but these are not sufficient. More measures are required and probably a combination of issuing new shares, reducing investment, pausing dividend payouts and selling property. However, if shareholders are unable to inject sufficient equity, squeezed property companies may be forced to sell large volumes of properties quickly. Such a course of events can

[49] The financial condition for the interest coverage ratio is usually between 2 and 1.5.

[50] See the average interest coverage ratio for the banks' counterparties in the article “Stress test of property companies” in *Stability in the Financial System*, Finansinspektionen, November 2022.

[51] Interest-rate derivatives are increasingly used by larger property companies to hedge against interest-rate risk.

be reinforced if rental income becomes weaker as a result of more premises being vacant. This could lead to a faster and larger downward adjustment of property values, which would increase the risk of lenders incurring large loan losses. This may have a negative effect on financial stability.[52]

[52] See *Financial Stability* 2022:2, Sveriges Riksbank.

2.3 Vulnerabilities and risks in the household sector

High inflation, rising interest costs and lower housing prices mean that sentiment in the household sector remains gloomy. The changed conditions are squeezing households' margins and testing their resilience. This is reflected in consumption and savings, both of which are declining. Households' substantial debts combined with their short interest-rate fixation periods pose risks to the stability of the macroeconomy. If consumption declines sharply, it could lead to profitability problems among companies and ultimately to increased loan losses for banks. In a bad scenario, financial stability could be adversely affected.

Households' financial conditions have deteriorated rapidly

Households are pessimistic about future economic developments, in particular about their own future financial situation.[53] A number of factors contribute to this. First, inflation continues to erode households' purchasing power and reduce their real wages, and second, mortgagors are facing significantly higher interest rates on their mortgages. The average interest rate on outstanding mortgages has risen from around 1.5 per cent in January 2022 to around 3 per cent in April 2023 (see Chart 20). For new mortgages, it has risen from about 1.4 per cent to just over 4 per cent during the same period. In addition, the Riksbank's forecast for the policy rate has been revised upwards, which means that mortgage rates will probably rise even more over the coming year.[54]

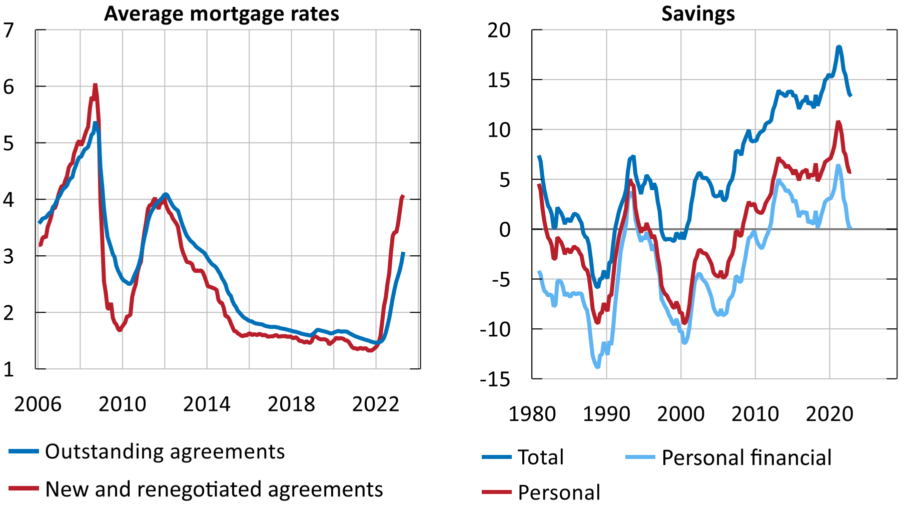
After having been relatively high for many years, savings are now falling as a result of weaker real wage growth. Households' net financial wealth has also been negatively affected by lower equity and housing prices. At the same time, the labour market remains strong despite the economic downturn, which means that most households have a working income, even if it has fallen in real terms.

[53] See *Economic National Institute of Economic Research's Economic Tendency Survey*, April 2023, National Institute of Economic Research.

[54] See *Monetary Policy Report*, April 2023, Sveriges Riksbank.

Chart 20. Mortgage rates and household savings in Sweden

Per cent, per cent of disposable income



Note. Left: Loans from monetary financial institutions, housing credit institutions and alternative investment funds. The final observation refers to April 2023. Right: Personal savings that correspond to total savings excluding collective savings. Personal financial savings correspond to personal savings excluding net investment in housing. The final observation refers to Q4 2022.

Sources: Statistics Sweden and the Riksbank.

Lower housing prices in Sweden and abroad

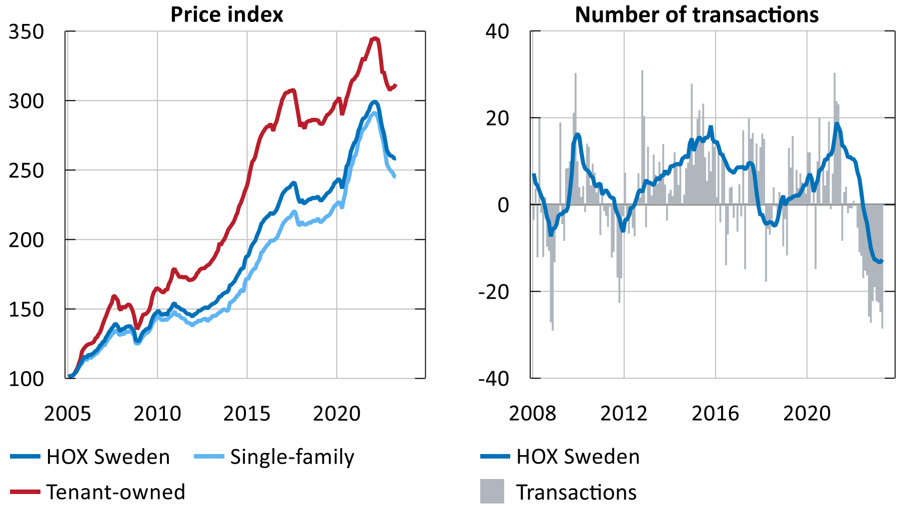
High inflation and rising interest rates have had a significant impact on the housing market. Since the peak in March 2022, housing prices, which rose by more than 25 per cent during the pandemic, have fallen by more than 13 per cent up to the end of April 2023 (see Chart 21). In parallel, housing sales have also decreased, while the supply of housing for sale has been relatively large compared with previous years.

Although the fall in housing prices has dampened at the beginning of the year, continued rising interest rates and weak real wage growth are expected to contribute to weak price developments going forward. According to the Riksbank's forecast, housing prices are expected to fall by 20 per cent from peak to trough. If this is the case, it does not necessarily imply any major negative consequences for the household sector as a whole, as prices would then be back at roughly the same level as just before the pandemic.

However, it is difficult to say how prices will develop in the future and there is a risk that housing prices will fall more and faster than expected. This could contribute to a sharp slowdown in consumption, especially among highly mortgaged households with limited buffers, as their scope for smoothing consumption with loans may be restricted as a result of them hitting the mortgage cap. Some households may also be forced to keep living in the same home longer than they intended, or be required to pay a residual debt if they sell the home. A sharp fall in housing prices could also have major implications for the construction sector, which is already facing major challenges.

Chart 21. Prices and turnover in the housing market

Index, January 2005 = 100, annual percentage change



Note. Seasonally-adjusted housing prices. Transactions refers to both tenant-owned apartments and single-family houses.

Sources: Hemnet, Svensk Mäklarstatistik, Valueguard and the Riksbank.

Falling prices can also create problems for households that have signed a binding advance purchase agreement for a newly built home. It is not certain that the loan commitment made by the bank in connection with the advance purchase agreement will apply once the household comes to sign a contract with the tenant-owner housing association before moving in. As it is difficult to back out of an advance purchase agreement, the household risks being obliged to compensate the tenant-owner association or housing developer for the financial loss entailed if the household does not fulfil the agreement.[55]

It is not only in Sweden that prices have fallen significantly over the past year, but it has also happened in countries like the Netherlands, New Zealand and Germany (see Chart 22). However, the speed and extent of the fall in prices so far vary. It is difficult to explain the differences, but the rise in interest rates is considered to be an important reason for the fall in housing prices. Rising interest rates can also affect housing prices to varying degrees depending on the level of indebtedness and the length of interest-rate fixation periods households have. Large debts combined with short interest-rate fixation periods can contribute to a faster impact of interest rate changes on different variables, including housing prices (see the fact box "More households choosing variable interest rates").

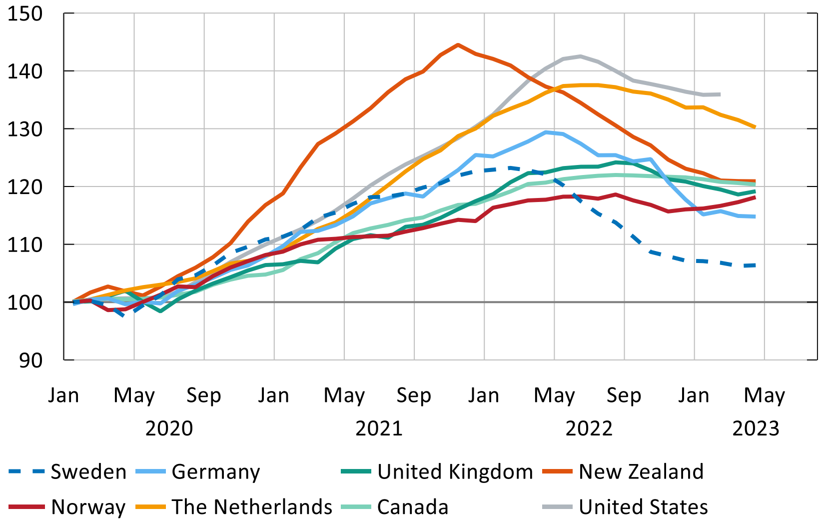
In addition, many households in Sweden have variable electricity price contracts, which may be a contributing factor to the greater fall in prices than in other countries. The pandemic contributed to an increase in household demand for bigger and better

[55] See Lidberg, A. "Housing cooperatives and financial stability", *Economic Commentaries*, No. 4 2018, Sveriges Riksbank.

housing. After the pandemic, these preferences have been reversed to a certain extent, but the situation differs across countries. This could also explain some of the differences in price developments.

Chart 22. Housing prices in different countries

Index, January 2020 = 100



Note. Housing prices are seasonally adjusted and refer to national indices for both single-family houses and tenant-owned apartments.

Source: Macrobond.

Interest expenses rising sharply

Household debt, both in size and in relation to income, is now growing more slowly but remains high in both an international and a historical perspective. The debt-to-income ratio is currently 195 per cent. The Riksbank's forecast indicates that it is expected to decrease in the coming years.[56] In April 2023, household loans grew at an annual rate of 1.9 per cent, which is considerably slower than the rate of the same period last year.[57] One reason why debt is growing more slowly is that it has become more expensive to borrow.

As almost 90 per cent of households' total bank loans have a remaining interest-rate fixation period of 2 years or less, existing borrowers are affected relatively quickly by the rising interest rates and must spend significantly more of their income on interest payments (see the fact box "More households choosing variable rates").[58] Interest rates also affect tenant-owner housing associations and are a factor in many of them having already raised their fees or needing to do so. This in turn affects the margins of mortgagors, which are being further squeezed. Including the debts of tenant-owner

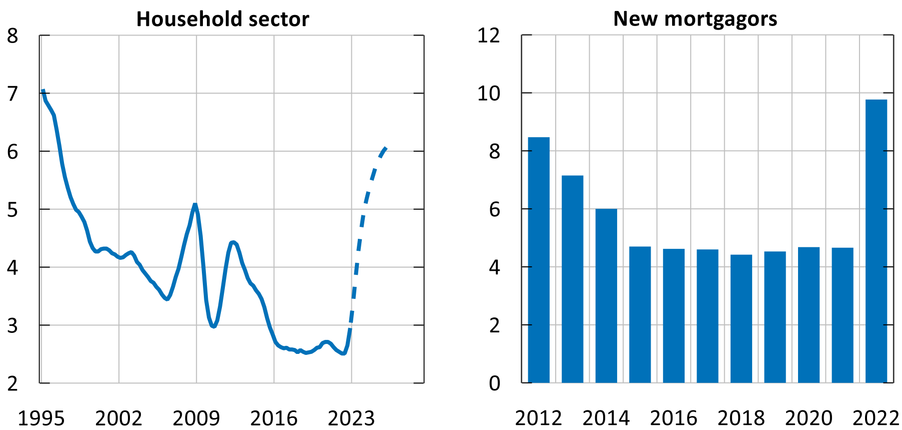
[56] See Chart A.3 in the Chart Appendix.
[57] See Chart A.4 in the Chart Appendix.
[58] See Chart A.5 in the Chart Appendix.

housing associations in households' debt-to-income ratio, it would amount to approximately 215 per cent.[59]

The Riksbank's forecast is that the interest-to-income ratio (interest expenditure in relation to disposable income) will rise rapidly and approach the levels of the mid-1990s, when the policy rate was over 8 per cent. The aggregate interest-to-income ratio also includes households without loans. Looking instead at the interest-to-income ratio for new mortgagors, it is more than three times higher. In FI's mortgage report, which is based on a sample of new mortgagors from the end of August/beginning of September 2022, the average interest-to-income ratio is estimated at 10 per cent. This is more than double the level in 2021 and the highest average interest-to-income ratio since FI began its analysis. Since interest rates have risen significantly since then, this means that the interest-to-income ratio for these mortgagors is in reality even higher than what is shown in the sample.

Chart 23. Interest-to-income ratios of the household sector and of new mortgagors

Percentage of disposable income



Note. Left: The interest-to-income ratio, which is calculated as households' interest expenditure as a proportion of their disposable income and assumes that everyone can take advantage of a 30 per cent interest deduction. Dashed line represents the Riksbank's forecast in Monetary Policy Report, April 2023. Right: Housing purchases, additional loans and bank switching. See also the note to chart 15 in The Swedish Mortgage Market 2023, Finansinspektionen.

Sources: Finansinspektionen and the Riksbank.

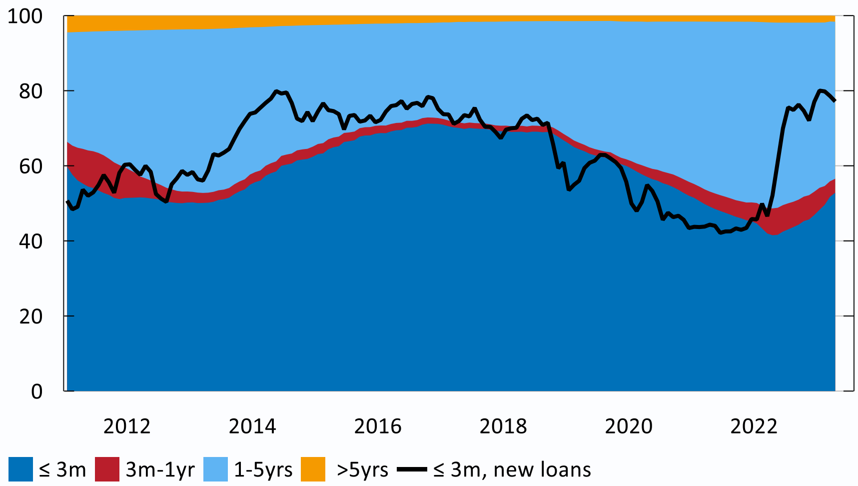
[59] See Chart A.3 in the Chart Appendix.

FACT BOX – More households choosing variable interest rates

Around autumn 2018, there was a change in trend as more mortgages were taken out at fixed rates. This coincided with households expecting mortgage rates, which were then very low, to rise slightly in the future. Over the past year, the trend towards more fixed-rate mortgages has been broken (see Chart 24). This may be due to a number of factors. One may be that the difference between fixed and variable mortgage rates increased in early 2022, and that many households began to feel greater financial stress. This may have led them to choose to a greater extent to choose a variable rate in order to minimise their current costs. Another factor may be that fixed mortgage rates have risen more than households' long-term expectations of the variable mortgage rate. This may also have contributed to more households choosing a variable rate in order to try to minimise the costs of the mortgage over a longer period of time as well.

Chart 24. Proportion of mortgages with a certain interest-rate fixation period in Sweden

Per cent



Note. Volume-weighted loans. Areas refer to outstanding loans (original maturity) based on MFIs' total lending to households. Line refers to new variable-rate loans based on MFIs' lending to households. Last observation refers to April 2023.

Source: Statistics Sweden.

These explanatory factors are in line with results from previous research and the Riksbank's analyses.[60] For example, Badarinza et al. (2018) show that households' choice between fixed and variable rates is affected by both the current and the expected future rate differential between fixed and variable mortgage rates.[61] Ehrmann and Ziegelmeyer (2017) show that if households have high interest expenses in relation to their income, this increases the propensity to choose a variable rate.[62] Households with limited liquid assets and limited ability to borrow may put more emphasis on minimising current costs, especially if they expect higher income in the future. This type of household opts for a variable interest rate to a greater extent.[63] Households that are more risk averse, have high income risk and low relocation probability tend to choose a fixed rate. To summarise, households' choice of interest-rate fixation period tends to be influenced by their financial situation and their perception of risk.

The high level of indebtedness in the household sector, 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. The Riksbank has previously highlighted this "cash flow channel" in several reports.[64] There are also analyses showing that housing prices and housing investment fluctuate more in economies with a high proportion of variable-rate mortgages. [65] In the current situation, the fact that many households in Sweden have short interest-rate fixation periods therefore contributes to the rising interest rates having a rapid impact on household consumption and savings, and could be a contributing factor in housing prices having fallen more in Sweden than in other countries.[66]

[60] See, for example, Holmberg, H. Janzén, L. Oscarius, P. van Santen, and E. Spector, "An analysis of the interest-rate fixation period for Swedish mortgages", *Economic Commentaries* no. 7, 2015, Sveriges Riksbank.

[61] Badarinza, C., J. Y. Campbell and T. Ramadorai (2018). "What Calls to ARMs? International Evidence on Interest Rates and the Choice of Adjustable-Rate Mortgages", *Management Science* 64: 5, 2275- 2288.

[62] Ehrmann, M. and M. Ziegelmeyer (2017). "Mortgage Choice in the Euro Area: Macroeconomic Determinants and the Effect of Monetary Policy on Debt Burdens", *Journal of Money, Credit and Banking* 49: 469-494.

[63] Coulibaly, B. and G. Li (2009). "Choice of Mortgage Contracts: Evidence from the Survey of Consumer Finances", *Real Estate Economics* 37: 659-673.

[64] See, for example, the article "Higher interest rate sensitivity in the Swedish economy", *Monetary Policy Report*, September 2022, Sveriges Riksbank, and footnote 38 in the same report.

[65] Calza, A., T. Monacelli and L. Stracca (2013). "Housing Finance and Monetary Policy", *Journal of the European Economic Association* 11: 101-122.

[66] See, for example, Di Maggio, M., A. Kermani, B. J. Keys, T. Piskorski, R. Ramcharan, A. Seru and V. Yao (2017). "Interest Rate Pass-Through: Mortgage Rates, Household Consumption, and Voluntary Deleveraging." *American Economic Review* 107 (11): 3550-88, and M. Flodén, M. Kilström, J. Sigurdsson, R. Vestman (2021). "Household Debt and Monetary Policy: Revealing the Cash-Flow Channel", *The Economic Journal*, 131 (636): 1742-1771.

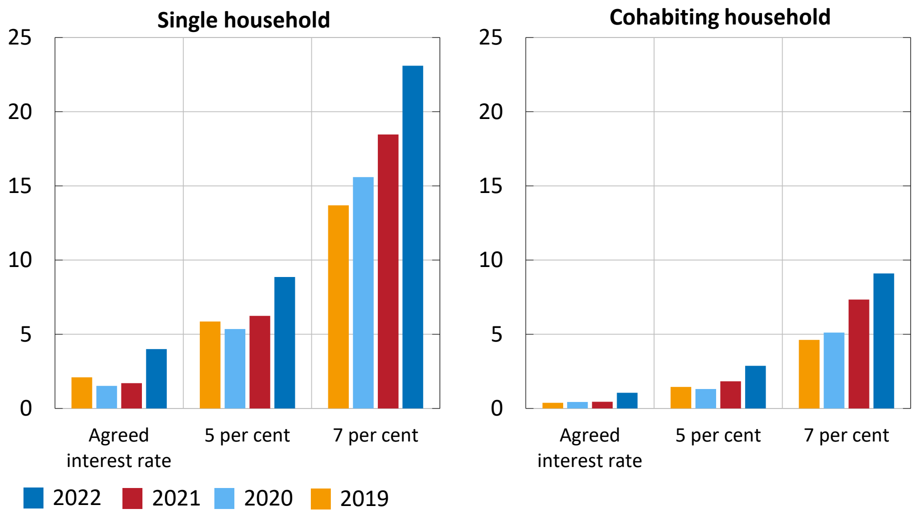
Households' resilience is tested when their margins are squeezed

In its mortgage report, Finansinspektionen performs stress tests with the aid of a simplified cash flow calculation inspired by the banks' discretionary income calculations made as part of the credit assessment process. The stress tests provide an indication of the resilience of new mortgagors. These are based on household income, on the agreed interest rate and on standard values for living costs that are intended to represent households' essential expenses. It then examines how borrowers' cash flows are affected in different scenarios, such as loss of income and higher interest rates.

The stress tests show that most mortgagors can cope with an interest rate equivalent to 7 per cent without their cash flows turning negative. However, many households would have significantly less of their income to use for savings and consumption. Average surpluses have decreased in 2022 and the share of mortgagors who have a deficit in their cash flows when the interest rate rises to 7 per cent has also increased over the past year. This indicates that the resilience of new mortgagors has deteriorated.

There are large differences in how different scenarios affect different households. Those living alone are usually more vulnerable, and among these households almost 25 per cent of new borrowers would have a deficit at an interest rate of 7 per cent (see Chart 25). As new mortgagors tend to have larger loans than existing borrowers, they may be particularly vulnerable to higher interest rates and falling housing prices.

Chart 25. Proportion of borrowers with a deficit at different mortgage rates
Per cent



Note. Refers to housing purchases, additional loans and bank switching. See also Chart 28 in The Swedish Mortgage Market 2023, Finansinspektionen.

Source: Finansinspektionen.

There is always uncertainty in how the living costs assumed in both FI's stress tests and banks' credit assessments relate to households' actual expenditure. It is therefore also uncertain how much new mortgagors are able to reduce their consumption to cover the costs of rising interest rates (see the fact box "Actual household expenditure and the standard values used in credit assessment").

FACT BOX - Actual household expenditure and the standard values used in credit assessments

Several banks use standard values for living and running costs in their assessment of a consumer's costs in connection with the credit assessment process.[67] In various contexts, banks have stated that they use as a basis the Swedish Consumer Agency's benchmarks for household costs that are to reflect a reasonable standard of living. However, these do not cover all household expenses and, as shown in Table 1, they are, for example, lower than households' actual expenses as reflected in Statistics Sweden's Household Budget Survey (HBS).

If banks apply these standard values within the framework of their credit assessment, it could reflect an assumption that there are parts of household consumption that it is reasonable to exclude in a stressed scenario, in favour of more necessary expenses, such as debt-servicing costs. If households are not aware of this assumption in banks' credit assessments, they may therefore have to make greater adjustments to their consumption when interest rates rise, than they had anticipated when they took out the loan.

Table 1. Household living costs based on various calculation methods

SEK per month

	Average of banks' standard values, 2022-2023	FI's standard values, 2022-2023	Expenditure according to HBS 2021	Consumer Agency benchmark, 2023
One adult	10,000	10,940	15,300	9,300
Two adults	16,700	18,942	27,500	15,600
Two adults, two children	25,600	27,064	36,400	26,500

Note. The table shows an average of the standard values for living costs that banks use in their credit assessments in 2022-2023, corresponding to actual household expenses according to Statistics Sweden's Household Budget Survey (HBS) for 2021 (not adjusted to 2023), FI's standard values according to the Mortgage Report and the Swedish Consumer Agency's benchmarks and standard values (Household living costs). Living costs do not generally include car costs, eating lunch out or childcare but do include food, clothing/shoes, hygiene/healthcare, sport/leisure, telephone/media, laundry/cleaning, utensils and home insurance. The following household types and types of expenditure have been used for the amount indicated for HBS 2021: single person without children, cohabitants without children and cohabitants with children (at least one child 0-19 years). From the item "Total expenditure", the following types of expenditure have been subtracted to make the figure more comparable with other standard values: "Housing, water, electricity, gas and other fuels", "Transport", "Vehicle tax" and "Gifts". The average value for the categories 18 years and over are used for the Swedish Consumer Agency's benchmark. The average value for the categories 6 months up to 18 years are used for children. The average value for the categories metropolitan city, medium-sized city and smaller urban community is used for common household costs.

Sources: Finansinspektionen, Consumer Agency, Statistics Sweden and the Riksbank.

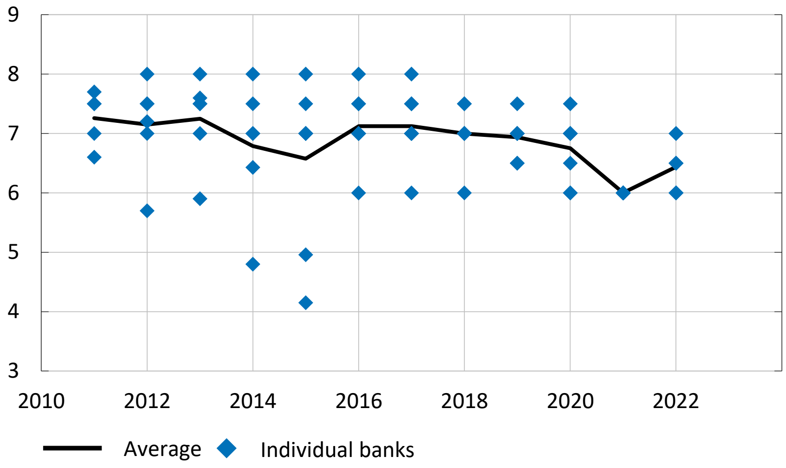
[67] See, for example, the Swedish Consumer Credit Act (2010:1846), Finansinspektionen's general guidelines on consumer credit (FFFS 2021:29), and Fact Box – Changes in standard costs and calculated interest rates in *The Swedish Mortgage Market 2023*, Finansinspektionen.

Banks have tightened their credit assessments

The decrease in households' demand for credit is partly because they want to borrow less when interest rates rise, and partly because banks have tightened their credit assessments. For example, many banks have raised the stressed mortgage rate used in the assessment, but the standard values linked to living costs have also been adjusted to reflect the increased costs for many households (see Chart 26). A tighter credit assessment means, all else being equal, that the borrower cannot borrow as much as before. A simplified calculation example shows that for a single household with a pre-tax income of approximately SEK 35,000, the stricter credit assessment means that it can borrow just over SEK 300,000 less.[68]

Chart 26. Banks' stressed mortgage rates over time

Per cent



Note. Each dot represents a bank. If there are less than eight dots at any given time, this means that two or more banks have the same stressed mortgage rate. The last update of the stressed mortgage rate is winter 2022/2023. Eight banks are included in the sample. The method for setting the stressed mortgage rate may differ across banks. Some banks state an actual figure for the stressed mortgage rate, others use a minimum floor together with a mark-up that may vary.

Source: Finansinspektionen.

The fact that credit assessments are adapted to the new cost situation is basically positive, as it helps to increase the capacity of households to service their loans. However, the speed of the rise in inflation and interest rates clearly illustrates the importance of a robust credit assessment where the credit assessment terms do not vary too much over time. Otherwise, there is a risk that changed credit assessment terms will make lending more pro-cyclical. This could lead to households borrowing too much in good times and their resilience deteriorating, and to banks being forced

[68] This assumes the data on standard values and charges used in FI's Mortgage Report (see Table 5, page 46) in 2021 and 2022 and a calculated interest rate of 6 and 7 per cent to describe the credit assessment before and after the tightening. The calculation assumes that the household amortises 3 per cent per year, pays 30 per cent income tax and utilises the interest deduction. The maximum level of the loan is then calculated, given that the discretionary income calculation ≥ 0 for both situations. The difference between the two amounts refers, in simplified terms, to the difference in borrowing capacity due to the tightening.

to tighten their credit assessment too much when times get worse. This, in turn, could reinforce declines in housing prices and in the economy more generally.

Lack of micro data makes it more difficult to assess how consumption may be affected

The stress tests conducted by FI focus on borrowers' ability to repay their loans and thus do not capture the effects on household consumption. Higher interest rates combined with a weak growth in real wages may lead to highly indebted households having to significantly reduce their consumption. The lack of micro data on household assets and liabilities makes it more difficult to assess how households may adapt their consumption and savings to the new conditions. Although the household sector's savings have been high for a long time and its assets have been considerable, it is unclear how these are distributed among different households.

An important factor for how household consumption may be affected is their savings and size of their liquid assets. The IMF shows in its latest stability report that consumption can fall more in the event of a decline in housing prices if savings are low. A study based on older Swedish data shows that highly indebted households have had fewer liquid assets in relation to their income compared with less indebted households.[69] A more recent study also indicates that many households with high debts in may have relatively small liquid assets.[70]

In case many mortgagors were to have limited buffers, it may be difficult, not least for highly mortgaged households, to offset cost increases, which may contribute to an even sharper decline in household consumption. This, in turn, may contribute to a deterioration in macroeconomic development and could ultimate lead to higher loan losses at banks. The fact that households have started to make net sales of their liquid financial assets is a clear sign that their cash flows have become more squeezed, and the decline in consumption has been significant.

Growth rate in consumer loans is decreasing

Consumer loans have grown rapidly in recent years and constitute a relatively large share of households' total debt payments in terms of interest costs, around 20 per cent.[71] However, credit growth in consumer loans has slowed over the past year. In April 2023 the annual growth rate was 0.8 per cent, which is the lowest level since the collection of statistics began.[72] Interest rates on consumer loans are significantly higher than mortgage rates, due to the higher credit risk for the lender. The average

[69] See Flodén, M., Kilström, M., Sigurdsson, J., and Vestman, R. (2020*)*, "Household debt and monetary policy: revealing the cash-flow channel", *The Economic Journal*, 131: 1742-1771.

[70] See M. K. Andersson and R. Vestman, "Liquid assets of Swedish households", *FI Analysis* no. 28, January 2021, Finansinspektionen.

[71] See Chart 2 in the report *Swedish Consumer Credit,* November 2022, Finansinspektionen.

[72] See Chart A.3 in the Chart Appendix.

interest rate on a consumer loan in April 2023 was around nine per cent, the highest level since 2006.[73]

The risk that households with consumer loans may experience payment problems increases as interest rates rise. In its report Swedish Consumer Credit, FI shows that almost one in five borrowers with consumer loans already had a deficit in the discretionary income calculation to begin with in 2022. More are expected to have a deficit if calculations are made using the Riksbank's forecast for inflation and the policy rate. The results indicate that many new consumer loan borrowers have small margins and can easily encounter payment problems. The fact that one in five have a deficit to begin with also indicates that there may still be shortcomings in the credit assessment process.[74] At the Swedish Enforcement Authority, consumer loan debt is the most common type of debt. The number of people with debts at the Swedish Enforcement Authority increased in 2022 compared with 2021, and the total household debt burden there amounts to just over SEK 102 billion, which is eight per cent more than in 2021.

[73] Refers to outstanding agreements. The average interest rate on new and renegotiated agreements was 9.4 per cent.

[74] According to Finansinspektionen, some lenders are collecting information on existing loans to a greater extent than before, but there are still lenders who use too little information on the financial circumstances of borrowers. The information base on smaller loans is particularly deficient. However, it is important that information on other loans is not only collected, but actually used to evaluate the borrower's financial position and solvency. According to FI, lenders used different calculations for this purpose, and the calculations use different amounts of information about the borrower's finances.

2.4 Vulnerabilities and risks in the banking system

The major Swedish banks have a favourable starting position, which helped them cope well with the global banking turmoil in March.[75] They also continue to have access to the funding they need. Going forward, earnings are expected to decline and loan losses to increase somewhat. At the same time, the banks' exposure to property companies and the sector's substantial need for loans constitute a risk. However, the major Swedish banks have ample headroom above the capital and liquidity requirements. They are therefore well able to manage a worse situation, and to maintain credit supply to viable companies within the sector. Within the framework of their lending, however, they have an important role to impose requirements on property companies to take measures to reduce their financial risks.

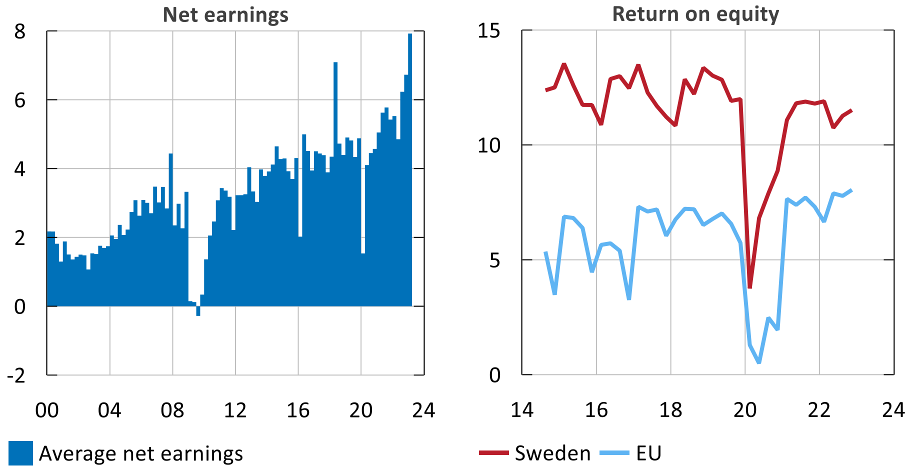
The major banks have a favourable initial position

During the spring, the global banking system has been characterised by uncertainty and turbulence in light of the events at a number of banks, in particular the US niche bank Silicon Valley Bank (SVB) and the major Swiss bank Credit Suisse (see the box “Banking sector turbulence during the spring”). Although the turbulence also affected major Swedish banks, they have generally fared well and have not suffered any significant confidence problems. This is partly due to the fact that they continue to show good profitability, resulting from both high earnings and low loan losses, and that they comply with the requirements imposed in various regulatory frameworks. They have long been more profitable than the EU average (see Chart 27), and are also showing good cost efficiency relative to other European banks. This means that they currently have a healthy margin down to the capital requirements. The price-to-book value (P/B ratio) of the major Swedish banks has fallen since the banking turmoil in March, but it is still higher than for other major European banks.

[75] The “major Swedish banks” or “major banks” here are Handelsbanken, SEB and Swedbank.

Chart 27. Earnings of major Swedish banks and return on equity of Swedish banks compared with EU average

SEK billion, per cent



Note. Left: Average net earnings on group level for the major Swedish banks up to and including Q1 2023 (SEK billion). Right: Seven Swedish banks for Sweden and 162 European banks in the EU up to and including Q4 2022 (per cent).

Sources: EBA and Macrobond.

Major Swedish banks take relatively small interest-rate risks

The major Swedish banks have relatively well-matched interest rate fixation between assets and liabilities and thus take relatively small interest-rate risks. More than 65 per cent of their lending to households and non-financial companies in Sweden has a remaining interest-rate fixation period of three months or less, and only a small proportion, around 12 per cent, has an interest-rate fixation period of two years or more.[76] In addition, the major Swedish banks have only around ten per cent of their assets invested in interest-bearing securities.[77, 78] Furthermore, the major Swedish banks value their bonds at market value to a large extent. Because they take small interest rate risks, the major Swedish banks also report that they would withstand a rapid change in market interest rates of one percentage point up or down without significantly affecting their capital ratio. [79]

[76] Based on Statistics Sweden's Financial market statistics, April 2023. From a borrower's perspective, however, this can be problematic as it means that they take higher interest-rate risks by having short interest-rate fixation periods. See the section "Vulnerabilities and risks in the household sector".

[77] Based on the banks' quarterly reports for Q1 2023.

[78] Based on Statistics Sweden's Financial market statistics from April 2023, Swedish MFIs as a whole also have around 10 per cent of their total assets invested in interest-bearing securities.

[79] Based on banks' capital adequacy reports for 2022.

FACT BOX - Banking sector turbulence during the spring

The US niche bank Silicon Valley Bank (SVC) had a significant inflow of deposits between 2019 and 2021, in particular from the US tech sector. The bank chose largely to invest these deposits in long-term, fixed-interest US government bonds.[80] This meant that SVB took a significant interest-rate risk. This was possible because there were clear deficiencies in risk management and supervision. Furthermore, SVB was subject to lower capital and liquidity requirements than European banks and larger banks in the US.[81]

The rise in interest rates in 2022 contributed to a fall in the value of SVB's bond holdings. The banking turmoil started when SVB failed in March this year to launch a USD 2.25 billion share issue to cover losses it had made after selling part of its bond holdings. This signalled to the market that the bank was undercapitalised and at risk of bankruptcy. When depositors lost confidence in the bank, it resulted in a bank run. The fact that 94 per cent of SVB's deposits, which were almost exclusively from companies, were not covered by the deposit insurance scheme contributed to the course of events. In a single day, on 9 March, just over USD 40 billion was withdrawn from the bank, equivalent to around 20 per cent of SVB's assets. This was historic in terms of both size and speed. The decline in confidence in SVB also quickly spread to other similar niche banks in the United States, such as Signature Bank and First Republic Bank. To protect confidence in the US banking system and prevent a financial crisis, the US authorities decided to take over SVB, and later Signature Bank as well. They also decided to protect all these banks' deposits, including those not covered by the deposit insurance scheme.[82] They did this by utilising a systemic risk exemption that allows them to act if they believe that financial stability is threatened. The US authorities also established a new loan facility, the Bank Term Funding Program.

Credit Suisse was also affected by the banking turmoil. However, the bank had experienced profitability problems for a number of years as a result of costly regulatory compliance issues, including those related to money laundering, and bankruptcies among some major clients. As a result, withdrawals from both depositors and asset management clients had increased since the autumn of 2022. For example, Credit Suisse's deposits decreased by just over CHF 138 billion during the fourth quarter of 2022, or around 40 per cent compared with the same period last year. The banking turmoil that ensued around the turbulence at SVB, combined with a major owner communicating its unwillingness to provide additional capital in the future, resulted in declining confidence in the bank and rapid deposit outflows. This finally forced the Swiss authorities to step in and help UBS take over the business of Credit Suisse for CHF 3 billion, which the authorities did by providing CHF 100 billion in liquidity, CHF 9 billion in loss guarantees and CHF 16 billion in write-offs of AT1 bonds.

[80] Moreover, the bonds were largely reported at acquisition value, which meant that there was a lack of transparency about their actual value.

[81] The SVB was in a transitional period and was not yet subject to LCR and NSFR requirements. See Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank, 28 April 2023, Federal Reserve,.

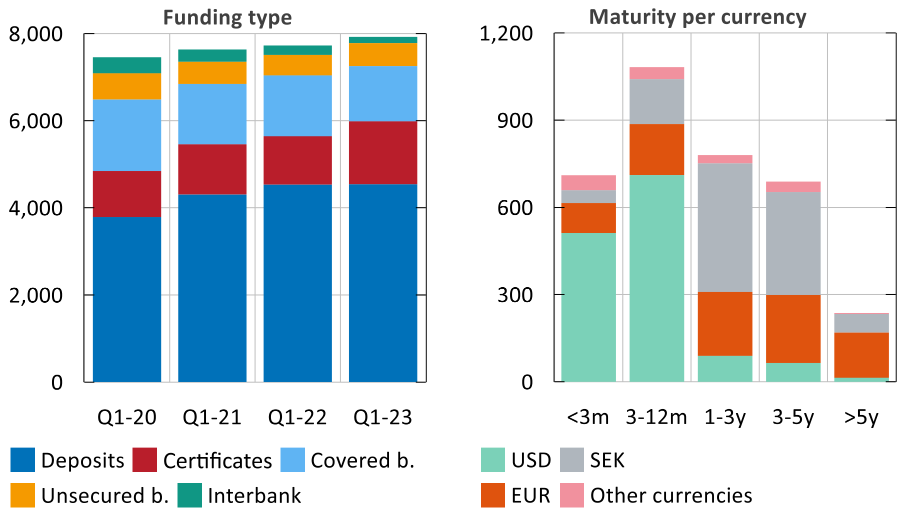
[82] The US authorities also took control of the third bank, First Republic Bank, in early May, selling off most of its assets to JP Morgan Chase, which then took over the bank's deposits.

Bank funding is sensitive to a drop in confidence

Although the major Swedish banks have a favourable initial position and do not take large interest-rate risks, they are, like banks in general, exposed to various types of liquidity risk. The major banks fund their lending with deposits from households and companies and by issuing securities in the capital markets. Approximately 70 per cent of the latter is in foreign currency, particularly US dollars (see Chart 28).

Chart 28. The major Swedish banks' funding sources and their market funding in each currency by maturity

SEK billion



Note. Data refers to Handelsbanken, SEB and Swedbank and does not include the banks' equity. The right-hand chart refers to the major banks' market funding in each currency by maturity during April 2023.

Sources: The banks' interim reports and the Riksbank.

Banks continue to have access to the market funding they need. However, the rise in interest rates and the global banking turmoil have increased the costs of market funding during the spring. For example, the interest rate spread (risk premium) has increased for both covered and uncovered bonds. However, the situation has improved somewhat in recent months, partly in line with increased demand from investors. [83]

Swiss authorities wrote down the value of AT1 bonds when UBS took over Credit Suisse. This led to uncertainty among investors about the value of such bonds in general, resulting in a fall in value. However, the major Swedish banks' AT1 bonds represent only 1.6 per cent of their risk-weighted assets, compared with around 6 per cent for Credit Suisse.[84] Calculations also indicate that the major Swedish banks would

[83] See, for example, *SEK covereds: Supply update*, May 2023, Nordea.

[84] Data as of 31 December 2022.

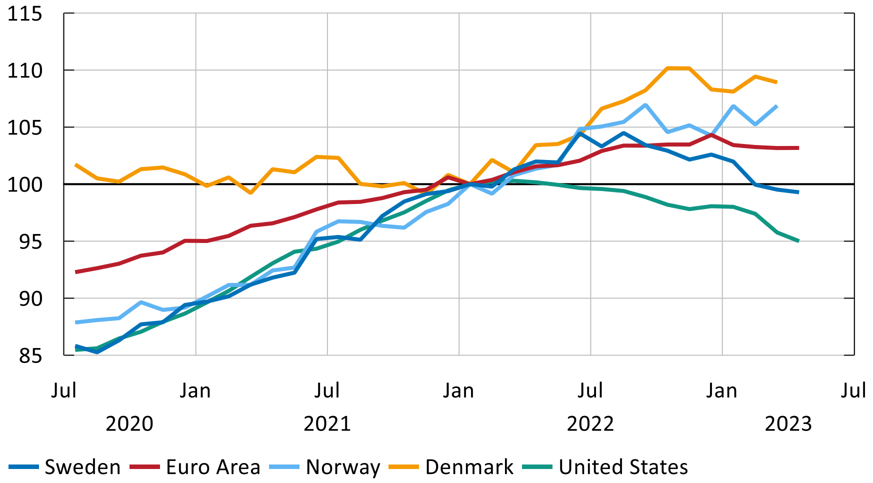
manage to fulfil the total capital requirements even without these bonds.[85] In addition, none of the approximately USD 4.4 billion in AT1s issued by the major Swedish banks have a call date in 2023.[86] This means that these instruments are a less important source of funding for them, and that the need for refinancing is relatively limited in the short term.

Growth in deposits has slowed down

Deposits are an important source of funding for the major Swedish banks. Similar to developments in many other countries, deposits from households and non-financial companies in the Swedish banking system increased rapidly during the pandemic, but have fallen back somewhat over the past year (see Chart 29).

Chart 29. Deposits in financial institutions in Europe and the US

Index, 1 January 2022 = 100



Note. For Sweden, data refers to deposits in MFIs. For Norway and Denmark, data refers to deposits in banks. For the US, data refers to all deposits in domestically chartered commercial banks (i.e., approved for deposit operations).

Sources: ECB, Fed, Statistics Sweden, Statistics Denmark and Statistics Norway.

Although total deposits in the Swedish banking system only decreased marginally in April 2023 compared to one year ago, developments differ across deposit segments (see Chart 30).[87] Deposits from non-financial companies have decreased by around 11 per cent from April 2022 to April 2023, although they remain at significantly higher levels than before the pandemic. One reason for the decrease could be that non-financial companies' production costs have increased, which means that they need to

[85] The three major banks would on average still be 2.5 percentage points above the total capital requirements as of Q4 2022 if their holdings of AT1 bonds are excluded.

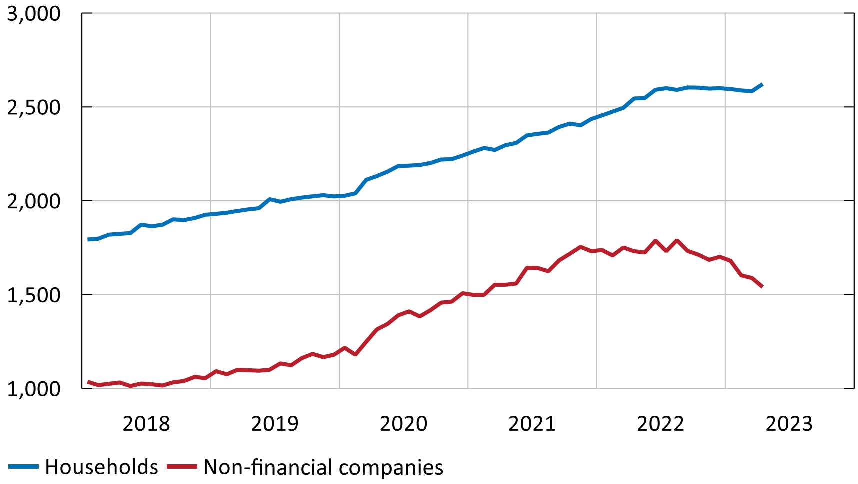
[86] Data from Bloomberg, 25 April 2023. The AT1s issued by the major Swedish banks correspond to about three quarters of the total amount of AT1s issued by Swedish banks, where only around two per cent of total issued AT1s have a call date in 2023.

[87] According to Statistics Sweden's Financial market statistics, total deposits in Swedish monetary financial institutions decreased by 0.5 per cent in April 2023 compared to April 2022.

use their funds to cover these costs to a greater extent. Another explanation could be that companies are now using some of the buffers they built up during the pandemic.

Companies have shifted a small part of their deposits from accounts with no conditions (on-demand deposit accounts) to accounts with conditions that offer a higher interest rate (savings accounts). As deposits in savings accounts are typically subject to some withdrawal restrictions, this should contribute to making deposits somewhat less volatile. However, around 90 per cent of corporate deposits remain in on-demand deposit accounts.[88] Looking at the distribution between banks, the major Swedish banks' share of corporate deposits has remained relatively stable since mid-2020. There has thus been no major outflow from the major banks in favour of other types of banks.

Chart 30. Deposits from Swedish households and non-financial companies in MFIs
SEK billion



Note. Data up to the end of April 2023.

Source: Statistics Sweden.

Household deposits increased steadily until mid-year 2022, after which they have been relatively unchanged. However, the distribution of household deposits has clearly shifted over the past year. As interest rates have risen, households have moved deposits from on-demand deposit accounts to savings accounts (see Chart 31). In April 2023, savings accounts accounted for 18 per cent of total household deposits, compared with 10 per cent in the same month the previous year.[89] In contrast to corporate deposits, the major Swedish banks' share of total household deposits has declined somewhat over time in favour of other banks, but the decline is relatively small seen in terms of market shares even though the absolute shifts are significant for small banks' balance sheets (see Chart 31). From April 2022 to April 2023, the major

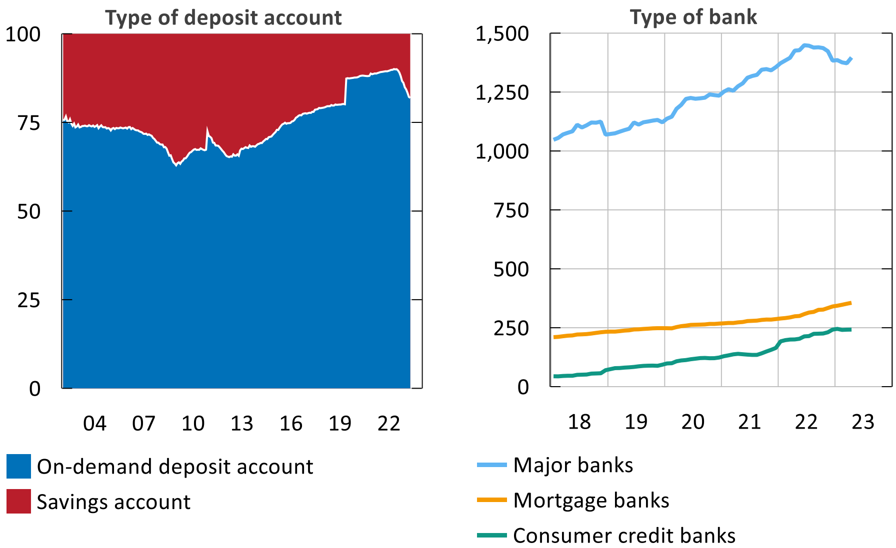
[88] Based on Statistics Sweden's Financial market statistics, April 2023.

[89] Household deposits in on-demand deposit accounts have decreased to the same extent, from 90 per cent in April 2022 to 82 per cent in April 2023.

banks' share of Swedish households' total deposits decreased by around three percentage points. At the same time, the share of smaller players increased – for consumer credit banks and mortgage banks it increased by about one or two percentage points each.[90]

Chart 31. Deposits from Swedish households by type of account and bank

Per cent, SEK billions



Note. Deposits are in MFIs and data is up to the end of April 2023. The left-hand chart is in per cent where the savings account series refers to deposits that are tied and/or subject to certain withdrawal restrictions. On-demand deposit accounts refer to deposits with no agreed maturity, period of notice or significant restrictions on withdrawal. This includes, for example, salary accounts and savings accounts with free withdrawals. A marginal share of deposits held in IPSs is not included. The right-hand chart is in SEK billion and the three bank types are major banks, mortgage banks and consumer credit banks. The major banks refer to Handelsbanken, SEB and Swedbank. Mortgage banks refer to Landshypotek, Länsförsäkringar Bank, SBAB and Skandia. Consumer credit banks refer to Avida, Collector, Klarna, Nordax, Resurs, TF Bank and Svea Bank.

Source: Statistics Sweden.

The banking turmoil has shown that deposits can also be risky

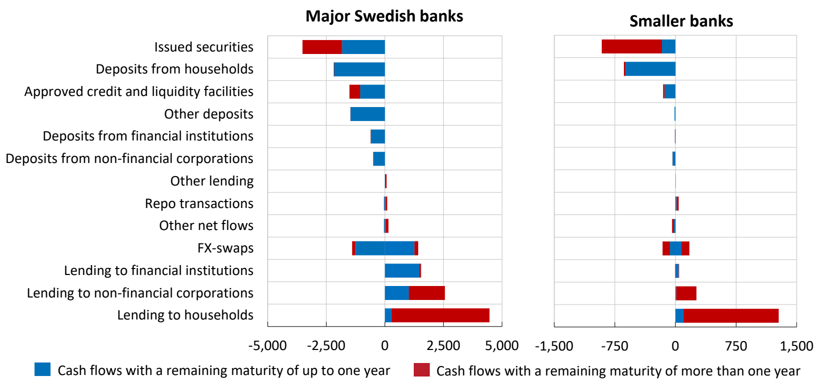
One way to illustrate banks' dependence on different sources of funding is to look at the cash flows that arise if they meet all their commitments and have all their claims repaid as planned (see Chart 32). This is not an illustration of the cash flows that banks will actually have, but rather an overview of the claims and liabilities that banks have on their balance sheets at a certain point in time. As shown in the figure, both major and some smaller banks have a significant share of market funding. One difference between the two groups is that the major banks have a larger share of market funding with a remaining maturity of up to one year. Both groups of banks also fund

[90] The term "consumer credit bank" here refers to banks whose main business model is to provide consumer loans to households. A mortgage bank is a bank whose main business model is to issue mortgages to households.

themselves largely with deposits. While the major banks have deposits from households as well as financial and non-financial companies, the smaller banks mainly have deposits from households. Both the groups have deposits from both Swedish and foreign households. As the majority of deposits for both the major banks and the smaller banks are on-demand deposits, only a small part is fixed with a remaining maturity of more than one year.

Chart 32. Cash flows by contract type and maturity for the major Swedish banks and a sample of smaller banks

SEK billion



Note. The smaller banks consist of Avanza, Klarna, Landshypotek, Länsförsäkringar Bank, Nordnet, Nordax SBAB and Skandiabanken, i.e. mortgage banks, consumer credit banks and securities banks. The household category includes households and small and medium-sized enterprises that can be classified as household exposures according to the standardised approach or the IRB approach for credit risk. Other deposits refer to operational deposits and deposits that cannot be allocated to other deposit items. Data from March 2023.

Source: The Riksbank.

The banks' deposits mean that they may face problems if depositors' confidence in the bank were to deteriorate. However, there is reason to assume that the risk of significant withdrawals is less for the Swedish banks than in the case of the US niche banks. One reason is that the deposits in smaller Swedish banks are to a large extent covered by the deposit insurance scheme. According to the Swedish National Debt Office, the proportion of deposits covered by the deposit insurance scheme is on average 83 per cent for the consumer credit banks and 71 per cent for the mortgage banks.[91] There is also data indicating that the share of insured deposits is generally higher in Europe than in other regions.[92] A large share of smaller banks' deposits also come from households, which in general have somewhat stricter limitations than companies when it comes to the size of withdrawals they may make each day via

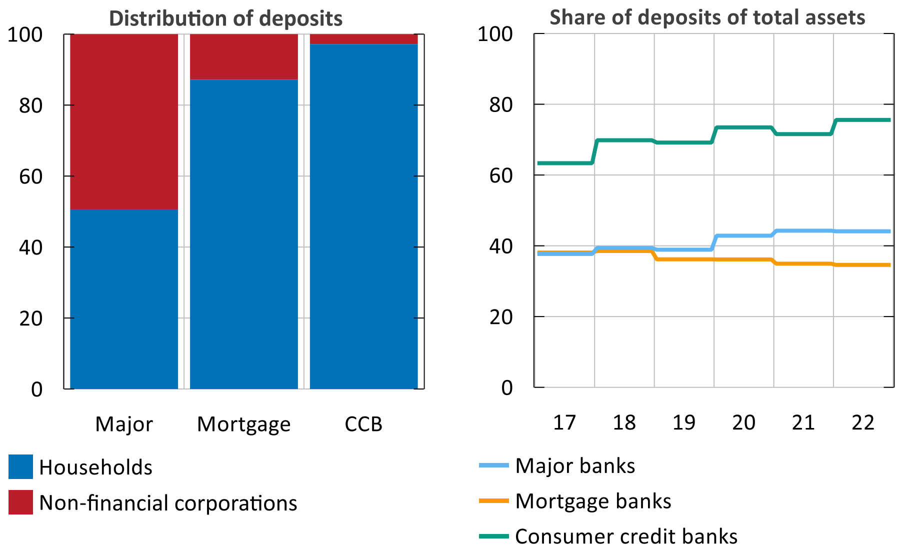
[91] Based on *Central Government Guarantees and Lending - A Risk Analysis*, March 2023, Swedish National Debt Office. The Debt Office divides banks into three categories, where category one is the major Swedish banks, category two consists largely of mortgage banks, and category three is other banks including consumer credit banks.

[92]See "*Average coverage ratio by broad region*", 2021 IADI Annual Survey, International Association of Deposit Insurers.

online banking. This differs from several of the US niche banks that encountered problems, where large shares of the deposits were from companies, and not insured.[93] For the major banks, a smaller share of deposits is covered by the deposit insurance scheme, 29 per cent. But a certain proportion of the major banks' deposits are linked to services that bank customers need in their operational activities, such as cash management and clearing. Such so-called operational deposits are assumed to be less volatile when calculating the liquidity measures that banks must fulfil. [94]

Chart 33. Composition of different banks' deposits from the public and share of deposits in relation to total assets for different types of bank

Per cent



Note. The major banks refer to the three major Swedish banks Handelsbanken, SEB and Swedbank. Mortgage banks refer to Landshypotek, Länsförsäkringar Bank, Skandia and SBAB. Consumer credit banks (CCB) refer to Avida, Collector, Klarna, Nordax, Resurs, TF Bank and Svea Bank. The left-hand chart refers to the distribution of deposits in April 2023.

Sources: Statistics Sweden and S&P Capital IQ.

[93] For example, only 6 per cent of deposits at SVB were covered by a deposit insurance scheme at the end of 2022; See *Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank*, 28 April 2023, Federal Reserve.

[94] LCR and NSFR were defined in the Basel Committee on Banking Supervision (2013) and the Basel Committee on Banking Supervision (2014), respectively. Using these metrics, the European Capital Requirements Regulation (CRR I and II) sets requirements for the banks.

FACT BOX - Differences in business models between banks

There are several fundamental differences between the business models used by major banks and different categories of smaller banks, and thus also between the risks the banks need to manage. Table 2 illustrates this with a typical major bank and a typical consumer credit bank. One difference between these types of banks is that major banks generally offer households and companies different types of loans such as mortgages, consumer loans and corporate loans, as well as other services such as asset and pension management. A large proportion of their lending has property as collateral. Consumer banks instead mainly offer unsecured consumer loans to households and various types of payment services. The table also shows that the share of deposits differs between the different banks, with consumer credit banks having a significantly larger share of deposits, while major banks also obtain funding in the capital market to a greater extent.

Table 2. Example of key performance indicators for a major bank and a consumer credit bank

	Major bank	Consumer credit bank
Operating income	SEK 55 bn	SEK 3 bn
Consumer loans/Total lending	A few per cent	35 per cent and upwards
Mortgages/Total loans	40 per cent and upwards	None, or a very small proportion
Deposits/Total assets	40-50 per cent	70 per cent and upwards
Loan loss provision levels	0.1–0.2 per cent	2–4 per cent
C/I ratio	45 per cent	60–70 per cent
Net interest income margin	About one per cent	Around five per cent and upwards
Net interest income/Average assets	About one per cent	About five per cent

Note. There are large variations between banks within the different groups, especially for consumer credit banks. This means that the figures for an individual bank may differ significantly from those presented in the table. The figures in the table are based on figures for 2022.

Sources: S&P Capital IQ and banks' annual reports

The major Swedish banks currently have high liquidity

The problems that have arisen in foreign banks during the spring emphasise the importance of good risk and liquidity management. The major Swedish banks' liquidity situation currently looks favourable. They meet by some margin the requirements for liquidity buffers (LCR) in all currencies and in individual significant currencies, as well as the requirement of net stable funding (NSFR). These measures illustrate 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.[95, 96]

The LCR does not take into account when the in- and outflows occur during the 30-day period, it measures only the aggregate flows after 30 days. The Riksbank has therefore produced a supplementary measure that also takes into account the liquidity risk during the period. Even according to this measure, the major Swedish banks currently have high liquidity. [97]

The major Swedish banks have so-called high-quality liquid assets corresponding to around SEK 2,300 billion distributed across different currencies, which corresponds to around a quarter of their total assets (see Table 3). They also hold a significant proportion, more than 80 per cent, of their high-quality liquid assets in central bank assets.[98] The major Swedish banks are thus relatively well able to use their liquid assets to meet cash outflows with little or no loss even under stressed conditions. For example, the major banks' corporate deposits constitute between 80 and 90 per cent of their liquid assets, which indicates that they can manage relatively large withdrawals.

However, the case of Credit Suisse clearly illustrates that banks' resilience is not guaranteed just because they fulfil regulatory requirements. Other aspects such as their internal risk management, profitability and business models are just as important.

[95] At the end of Q1 2023, the LCR and NSFR averaged 151 per cent and 115 per cent respectively for the major Swedish banks.

[96] SVB was not yet subject to LCR and NSFR requirements, but calculations by the Fed indicate that its LCR would have been 90.8 per cent at the end of Q4. See *Review of the Federal Reserve's Supervision and Regulation of Silicon Valley Bank*, 28 April 2023, Federal Reserve.

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

[98] Central bank assets include central bank reserves and central bank securities.

Table 3. Composition of the major Swedish banks' high-quality liquid assets
SEK billion

Type of high-quality liquid asset	SEK	USD	EUR	Other curren-cies	TOTAL
Central bank assets	682	394	676	139	**1,891**
Extremely high-quality covered bonds	98	1	2	79	**180**
Banknotes and coins	1	0	6	0	**7**
Government securities	10	8	41	12	**71**
Other	65	34	8	44	**151**
TOTAL	856	437	733	274	**2,300**

Note. Data as of 31 March 2023. Central bank assets include both central bank reserves and central bank securities.

Source: The Riksbank.

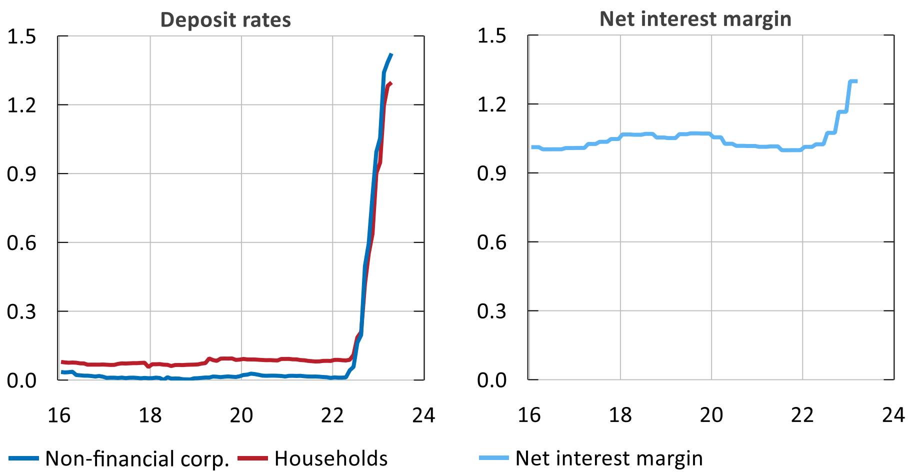
Higher deposit costs expected to put pressure on net interest-rate margins

Rising net interest income was one of the main reasons why the profitability of the major Swedish banks improved last year and at the beginning of this year, and their net interest margin was the highest for many years (see Chart 34).[99] This has to do with banks having been quicker to raise lending rates than to raise their deposit rates when general interest rates have increased. The banks have transferred around 70–80 per cent of the rate increase to mortgage rates, but only around 30–40 per cent to deposit rates.

[99] Net interest income is the difference between revenue from lending and the cost of deposits and borrowing. The net interest income margin shows the relationship between net interest income and interest-bearing assets.

Chart 34. Deposit rates of Swedish banks and net interest margin of the three major Swedish banks

Per cent



Note. Left: New agreements up to the end of April 2023. Right: An average for the three major Swedish banks based on quarterly data up to and including Q1 2023.

Sources: The banks' interim reports and Statistics Sweden.

However, several factors indicate that growth in net interest income will slow down in 2023, and as a consequence so will growth in the profitability of the major Swedish banks. The main reason is that deposit costs are expected to increase. This is because the banks need to raise deposit rates to be competitive, not least in light of the decreasing volume of deposits as households and companies reduce their saving. In addition, customers, especially households, are increasingly choosing to transfer their savings from on-demand deposit to savings accounts, which further increases the costs for banks.

Larger loan loss provisions among consumer credit banks

Although the major banks have taken into account a poorer macroeconomic outlook and weaker corporate profitability, their loan loss provisions still remain at low absolute levels.[100] Instead, other types of banks are currently making higher provisions. In both 2021 and 2022, for example, the consumer credit banks have made provisions for loan losses that exceeded those of the major banks in absolute terms, which is largely due to the fact that they have more risky lending (see Chart 35).

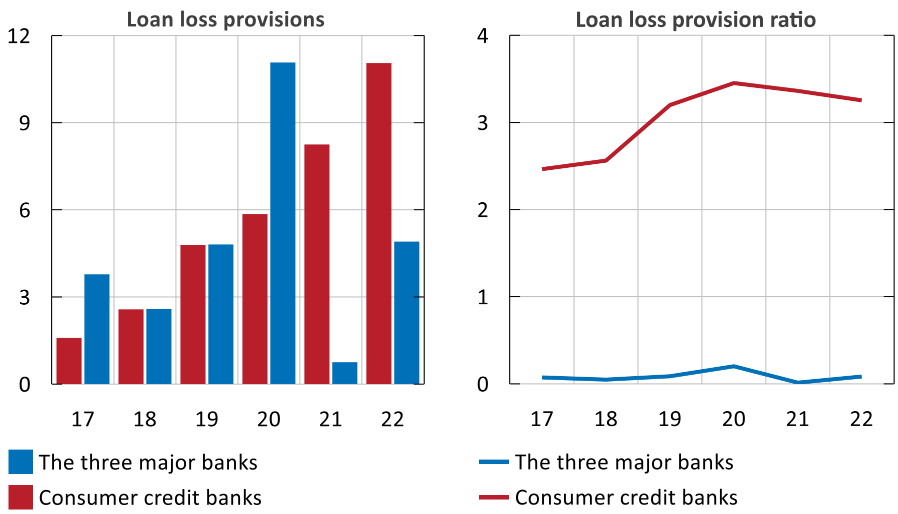
The major banks and consumer credit banks also have different ways of managing their provisions. Consumer credit banks choose to a greater extent to write off loans or sell them to debt-collection agencies, which makes it more likely that they will realise the loan losses for which they have made provisions. The major Swedish banks, on the other hand, tend to keep the loans on their balance sheets for a longer period of time and can then to a certain extent reduce the actual losses.

[100] 0.08 per cent of lending on average for the three major Swedish banks for Q4 2022.

The size of the banks' actual loan losses depends on future economic developments and the collateral the banks have for the loans. In a severely negative macro scenario, they could increase significantly. In the current situation, however, the major Swedish banks are relatively well able to manage the scenario in the Riksbank's stress test for lending to Swedish non-financial companies (see the fact box "Stress test of banks' lending to non-financial companies").

Chart 35. Loan loss provisions and loan loss provision level

SEK billion, per cent



Note. Consumer credit banks refer to Avida, Collector, Klarna, Nordax, Resurs, TF Bank and Svea Bank. Left: SEK billion. Left: loan loss provisions as a share of the banks' average lending to the public (per cent).

Source: S&P Capital IQ.

Banks' high exposure to property companies poses a risk to financial stability

The major Swedish banks' significant exposures to the commercial property sector pose a specific risk that may threaten financial stability.[101] Many property companies are being squeezed by the higher interest rates, partly because their funding costs have increased and partly because the value of their properties is falling. This may mean that the banks' will, going forward, need to make larger loan loss provisions for their lending to this sector, which would have a negative impact on their profitability. It could also reduce confidence in the banking system, and thereby increase the banks' borrowing costs. In addition, property companies has a large refinancing need in the next few years, which could exacerbate a negative course of events.

[101] According to the EBA 's Risk Dashboard for Q4 2022, Swedish banks' average lending to the commercial property sector made up 13.5 per cent of their total lending, compared to the European average of 6.9 per cent.

The major Swedish banks currently have buffers that exceed the internal target levels by 1–3 per cent above the capital requirements. A simplified calculation example indicates that the major banks could technically have extra borrowing capacity of around SEK 780 billion at a risk weight of 35 per cent.[102] This is more than what the property companies need to borrow for the remainder of 2023 and 2024. However, it is unlikely that the major Swedish banks will meet the property companies' entire funding needs on their own. However, it is important that the banks maintain credit supply to viable companies in the current situation. At the same time, the banks must impose clear requirements on property companies to continue to take measures to reduce their financial risks.

[102] This is based on the assumption that the banks want to hold a buffer that at least amounts to the midpoint of the target level, i.e. 2 per cent above the requirements.

FACT BOX - Stress test of banks' lending to non-financial companies

Historically, the loan losses of the major Swedish banks have mostly come from their corporate lending. To better understand the risks associated with the banks' Swedish corporate portfolios, the Riksbank has been conducting capital stress tests based on micro data since autumn 2022.[103] As the Riksbank has no access to microdata on the household level and on corporate lending abroad, this lending is not covered by the stress test.

The Riksbank has updated the stress test with a new scenario, which covers three years and is relatively similar to the one used in the autumn. This scenario also indicates a situation with stagflation, i.e. a combination of weak growth, higher unemployment, higher inflation and higher interest rates (see Table 4). The difference between this scenario and the previous one is that various market rates rise more, GDP declines more and housing prices fall less. One reason why the fall in housing prices is not as large here is that they have already started to fall. Calculated from the price peak (before the scenario begins) to the trough (second year of the scenario), the fall is similar to the fall in the previous scenario.

Table 4. Annual economic developments in the scenario

Per cent and percentage points

	Year 1	Year 2	Year 3
GDP	-4.6	-4.7	2.5
Housing prices	-12.9	-11.0	5.5
Unemployment	9.5	12.0	11.8
Treasury bill 6 M	5.0	5.5	4.8
Company spread	1.4	1.4	1.4

Note. GDP and housing prices are reported as annual percentage change, unemployment is expressed as a percentage, Treasury bill 6 M is expressed in per cent and company spread is expressed in percentage points. Here, the company spread is defined as the difference between the interest rate companies face and the interest rate on a six-month treasury bill.

Source: The Riksbank

The results indicate that loan losses in the Swedish banking system could amount to just over SEK 60 billion over a three-year period, or just under three per cent of lending to non-financial companies in Sweden.[104] This can be compared with SEK 50 billion in the last autumn’s stress test. The difference is largely due to the spring test being based on a more serious scenario. The outcome of the stress test would entail loan losses of around SEK 20 billion per year over a three-year period. If we compare the

[103] For more information on the method used, see: N. Amberg, J. Li and J. Winstrand (2022), “A microdata-based approach for stress testing of banks' loan losses from corporate lending”, *Staff Memo*, November, Sveriges Riksbank and D. Buncic, J. Li, P. van Santen, P. Wallin and J. Winstrand (2019) “The Riksbank’s approach to stress testing bank capital”, *Staff Memo*, May, Sveriges Riksbank.

[104] The banks and institutions included in the stress test account for around 95 per cent of Swedish monetary financial institutions’ non-household lending.

losses for one year in the test with the provisions that the banks in the test actually made in 2022, this would mean losses that are around 7–9 times greater.[105] For the major Swedish banks, the losses in the stress test total around SEK 33 billion over the three-year period. However, given that they have capital levels that exceed the internal target levels for capital, they currently have room to absorb losses of this magnitude and still have buffers left. However, the stress test does not cover banks' total lending and taking into account their lending in other countries and to other sectors, their total expected loan losses may be higher in a situation similar to the scenario.

[105] Based on estimates from the banks' annual reports and certain assumptions about the proportion of the banks' loan loss provisions that come from the Swedish corporate portfolio.

2.5 Vulnerabilities and risks among other financial institutions

Non-bank financial institutions can also have an impact on financial stability through their actions in the financial markets, as some of them manage large portfolios of assets. An example is Swedish insurance companies. Their allocation decisions can affect market funding costs for other agents. Swedish corporate bond funds can also pass on stress to non-financial companies, as they provide a large part of their funding, and are sensitive to large redemptions by unitholders.

Non-bank financial institutions have grown substantially over time

Non-bank financial institutions, e.g. investment funds and insurance companies, have become increasingly important over time in both the global and the Swedish financial system.[106] Their significance is illustrated, for example, by the fact that they make up almost half of total global financial assets and thereby also a large share of the capital supply in the economy.[107] This development brings benefits, such as greater risk spreading in the financial system and more investors who can potentially be active as asset buyers even in times of stress. But the development also involves risks, as some of these institutions are highly leveraged or exposed to liquidity risks. In addition, many of these agents opted during the period of low interest rates to increase their risk-taking to generate better yield, which makes them particularly vulnerable in the new interest rate environment. These are risks that have been highlighted by several international organisations, such as the FSB, ESRB and IMF.

Higher interest rates may benefit insurance companies but create short-term risks

Life insurance and occupational pension companies normally benefit from slightly higher interest rates. This is partly explained by the guaranteed commitments that they have in relation to their policyholders. These commitments generally have longer maturities than the cash flow from the companies' interest-bearing assets. This means that the commitments are more sensitive to changes in interest rates (have higher duration) than the assets, and that rising interest rates in themselves improve their solvency. Higher interest rates can also lead to reduced risk-taking for insurance and occupational pension companies in the medium term.[108]

[106] These institutions are often collectively named "non-banks". See, for example, *Global Monitoring Report on Non-Bank Financial Intermediation 2022*, December 2022, Financial Stability Board.

[107] See Chart A.6 in the Chart Appendix. In Sweden, too, the non-bank sector has grown strongly over time.

[108] This is because they do not need to have an equally large share of riskier assets to fulfil the financial guarantees pledged to their policyholders.

The average solvency capital requirement (SCR) ratio has decreased for Swedish insurance companies by 38 percentage points to 207 per cent in 2022.[109] This is partly due to them having a large share of riskier assets, e.g. equities and mutual fund units (see Chart 36). In 2022, stock market falls and interest rate rises contributed to the largest decline in the value of Swedish life insurance and occupational pension companies' total investment assets since the 2008 global financial crisis. Even though the share of riskier assets has fallen somewhat in 2022, it remains high. This means that insurance companies are still vulnerable to falls in the prices of these assets, something which the Riksbank has highlighted previously.[110]

Insurance companies are major investors in several markets

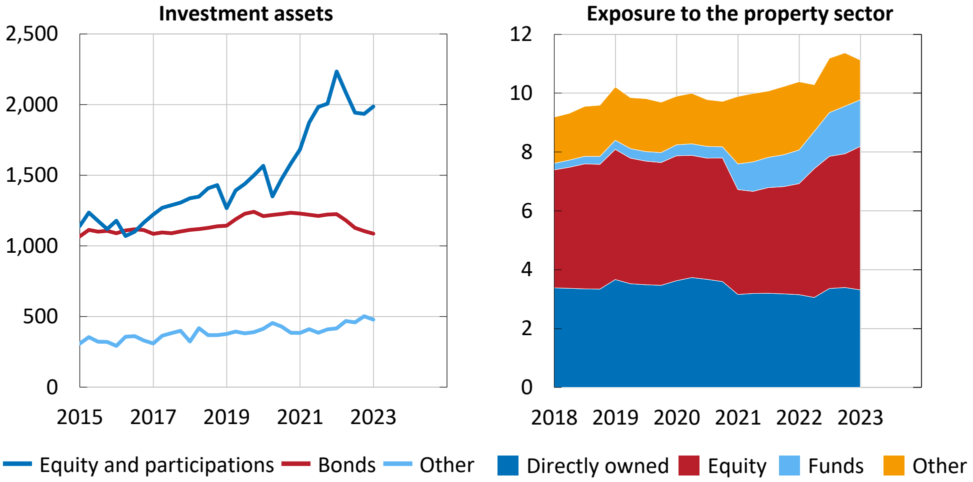
Insurance companies are major and important investors in the Swedish financial market. Excluding unit-linked insurance, where the policyholder bears the investment risk, the investment assets of life insurance and occupational pension companies amount to almost SEK 3,600 billion (see Chart 36). Insurance companies also have large holdings in and are major financiers of several types of company, such as property companies. Insurance companies' total exposure to the property sector has increased in recent years and accounts for just over 11 per cent of their total assets (see Chart 36), which is slightly more than their European counterparts.

[109] SCR is one of two capital requirements included in the European Solvency II Directive. The SCR ratio is the capital base divided by the SCR. However, figures from Finansinspektionen show that the average ratio for the risk-sensitive capital requirement for Swedish occupational pension companies has increased somewhat. See statistics on European insurance undertakings from the European Insurance and Occupational Pensions Authority (EIOPA), Insurance statistics (europa.eu).

[110] See *Financial Stability*, 2022:2, Sveriges Riksbank.

Chart 36. Investment assets of life insurance and occupational pension companies and exposure of insurance companies to the property sector

SEK billion, per cent of total assets



Note. Unit-linked insurance where the policyholder bears the risk is excluded. Left: Equity and participations refers to listed and unlisted shares of equity, investment funds, warrants and other equity. Other refers to, for instance, cash and bank balances, money market instruments, loans, buildings and land. Right: Occupational pension companies are included after 2021 and then weighted according to their share of total assets. Equity refers to equity in listed property companies and equity in wholly owned property companies, funds to property funds and other to bonds issued by property companies and other debt instruments.

Sources: European Insurance and Occupational Pensions Authority (EIOPA) and Statistics Sweden.

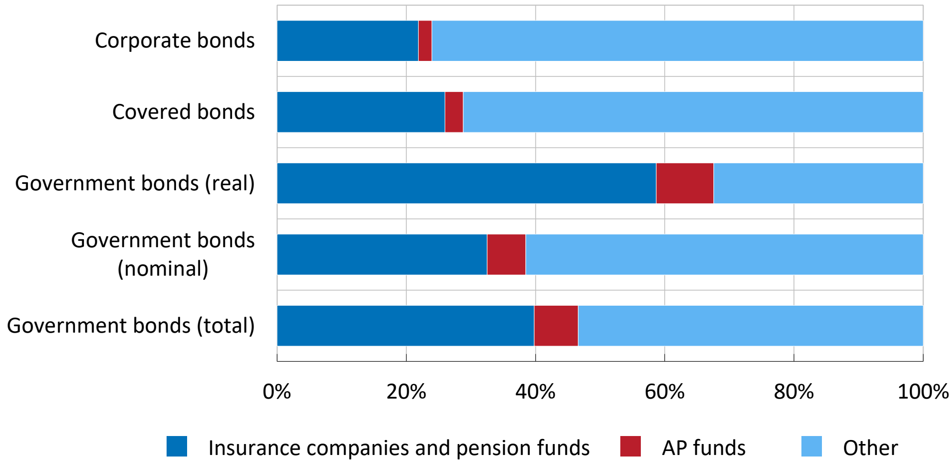
An important part of insurance companies' financial assets are made up of interest-bearing assets. Together, they own a large proportion of outstanding Swedish government, covered and corporate bonds (see Chart 37). How insurance companies choose to allocate their assets can thereby affect the interest rates and funding costs for a large number of institutions.[111] There is currently no reason to fear that the higher interest rates would force insurance companies to sell assets for solvency purposes. However, higher interest rates can affect companies' liquidity needs. For example, the need can increase as companies need to pay cash (variation margin) to the counterparty in their interest derivatives when interest rates rise. On the European level, insurance companies that use interest derivatives tend to sell interest-bearing assets to pay variation margin.[112] In Sweden, life insurance and occupational pension companies made net sales of 5 per cent of their bond portfolios and at the same time bought equity in 2022, a year in which interest rates rose.[113] There are several reasons for selling interest-bearing assets, one of which can be to pay variation margin.

[111] In addition, several of the agents active in the fixed income market consider the functionality and liquidity in the fixed income market to be poor. See *Financial Markets Survey spring 2023*, Sveriges Riksbank.

[112] See *Financial Stability Report*, December 2022, European Insurance and Occupational Pensions Authority (EIOPA).

[113] See statistics on insurance companies' net transactions from Statistics Sweden Swedish insurance companies, capital investments (scb.se).

Chart 37. Insurance companies' share of Swedish bonds as of 31 December 2022



Note. Refers to the nominal value of bonds issued in SEK, excluding the Riksbank's holdings as of 31 December 2022. In February 2023, the Riksbank decided to start selling government bonds as of April 2023. Corporate bonds refer to bonds from so-called non-financial companies.

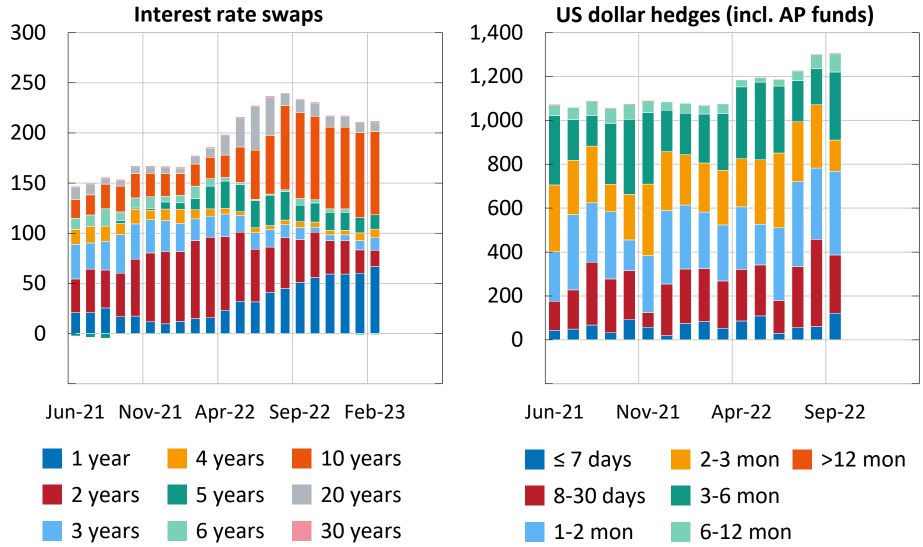
Sources: Statistics Sweden and the Riksbank.

Insurance companies' use of derivatives can create liquidity needs

Life insurance and occupational pension companies use derivative instruments, such as interest rate and foreign exchange (FX) swaps, to reduce certain types of risk and to improve the efficiency of their asset and liability management (see Chart 38). However, the use of these derivatives may entail other types of risk, primarily linked to an increased need for liquidity.

Chart 38. Insurance companies' interest rate swaps and US dollar hedges

SEK billion



Note. Net positions per remaining time to maturity. Based on nominal amounts for outstanding contracts on the last trading day of each month. Left: Plain vanilla interest rate swaps that refer to STIBOR. Positive values on the vertical axis are interest rate swaps where the insurance company receives a fixed rate and pays a variable rate. Negative values are the opposite. Right: Contracts where USD is exchanged for SEK or vice versa.

Source: The Riksbank.

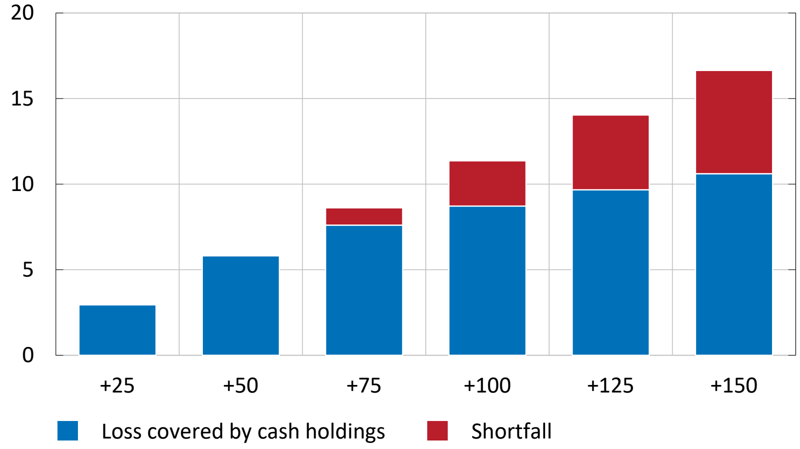
Insurance companies use interest rate swaps in which they receive a fixed rate from a counterparty and pay a variable rate back, to hedge against falling interest rates negatively affecting their solvency.[114] This means that they must submit variation margin to the counterparty when interest rates rise to cover the decrease in value on the contracts. Most interest rate swaps are cleared at a central counterparty (CCP) and the collateral must then be in cash. The Riksbank's stress test shows that several insurance companies may run out of cash if interest rates rise substantially, and that they may then need to sell securities to raise the cash they need to pay the CCP (see Chart 39). If interest rates were to instantaneously rise by 150 basis points for all maturities it would, according to the stress test, be necessary for them to sell securities for around SEK 6 billion. This is approximately the volume traded each day in Swedish government or covered bonds.[115] Although in terms of their total investment assets, this is rather a limited amount (see Chart 36), liquidity needs may also arise from other sources, for example in their FX swaps.

[114] In this way, they can improve the matching between their assets and commitments, as the value of the interest rate swap will develop in the same way as their commitments when interest rates change.

[115] The average volume traded each day in Swedish government and covered bonds was around SEK 5 and 8 billion respectively in 2022. This is based on data from Selma reporting from the Riksbank's counterparties, and is therefore not necessarily a complete picture of the whole market.

Chart 39. The Riksbank's stress test of insurance companies' interest rate swaps

Losses in SEK billion



Note. Horizontal axis refers to basis points for all maturities. Cash is the item cash and bank in life insurance/occupational pension business. Denotes net positions of so-called plain vanilla interest rate swaps that refer to STIBOR, in which the company receives a fixed rate and pays a variable rate. Holdings are as of 22 September 2022. See M. Andersson (2023), "The liquidity crisis in UK pension funds from a Swedish perspective", Staff Memo, January, Sveriges Riksbank, for a more detailed description of the methodology.

Sources: Companies' annual reports, Macrobond and the Riksbank.

Insurance companies invest a large proportion of their policyholders' premiums in foreign assets. To reduce exchange rate risk, they use FX swaps, in which they exchange Swedish kronor for foreign currency for repayment in the future. In these swaps, they may need to pay the counterparty cash or liquid fixed income securities if the krona depreciates. In addition, volatility in the fixed income and foreign exchange markets has increased and liquidity has deteriorated. This has led to it becoming more difficult to find buyers and sellers of fixed income instruments, and it places higher demands on insurance companies' liquidity management

In addition, FX swaps have relatively short maturities. As insurance companies typically wish to own their foreign assets for a long time, they will therefore need to renew their FX swaps, which gives rise to risks.[116] If the companies were not able to renew their FX swaps, they may need to realise losses on their foreign assets or buy an amount of foreign currency in the spot market. This amount may then be large in relation to the volumes normally traded there.[117] During the recent period of global banking turmoil, insurance companies found it more difficult than usual to renew their FX swaps, partly because it became more expensive for the major Swedish banks, which are often the counterparties to the FX swaps, to access dollars.

[116] See *Financial Stability, 2022:2*, Sveriges Riksbank and "The interconnectedness of insurance firms, National Pension Funds and banks via the foreign exchange market", article in *Financial Stability, 2020:1,* Sveriges Riksbank.

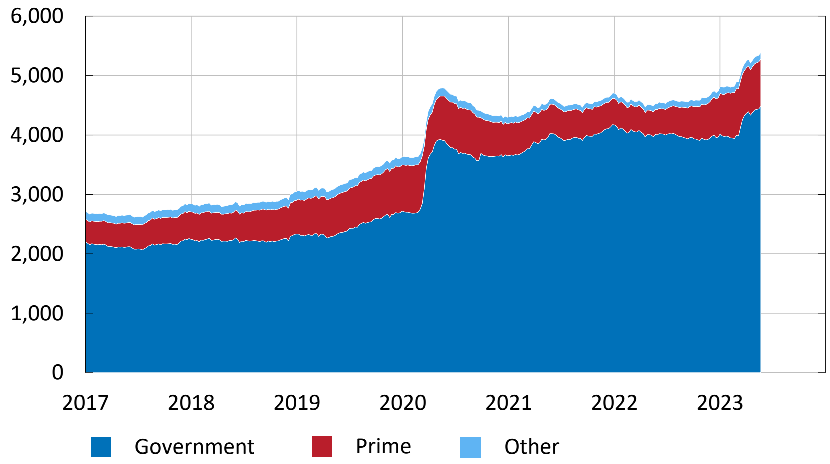
[117] If the FX swap market stops functioning for one month, dollar hedges worth around SEK 450 billion could expire (see Chart 38). The average daily turnover in the SEK/USD spot market was almost SEK 50 billion in 2022. This is based on data from Selma reporting from the Riksbank's counterparties and is therefore not necessarily a complete picture of the whole market.

Large inflows in some money market funds

Recent months have seen large inflows into US money market funds, resulting in the growth of their assets under management (see Chart 40).[118] One reason is that increases in interest rates have increased the yields of the short-term securities in which money market funds invest. As interest rates have risen over the past year, some bank deposits and capital from other types of funds have been transferred to money market funds. This development was reinforced by the banking turmoil in March.

Chart 40. Assets under management for US money market funds

USD billion



Note. Government money market funds primarily invest in government securities. Prime money market funds primarily invest in commercial paper issued by both financial and non-financial companies.

Source: Macrobond.

From a financial stability perspective, both US and European MMFs have long been considered vulnerable. This is because they take liquidity risks, as they offer unit holders daily redemptions while investing in less liquid assets to a large extent. [119] This is particularly true for money market funds that primarily invest in commercial paper, like US prime money market funds. The liquidity of such assets tends to be particularly low in times of stress. In addition, some of the money market funds, both government and prime and European equivalents, use constant net asset values. This makes them sensitive to, for example, interest rate changes, which in turn could cause large outflows.[120] If these larger outflows coincide with stress in the financial markets, liquidity risks may materialise, which would have repercussions for underlying money markets,

[118] Some types of European money market funds have also had inflows recently.

[119] At the global level, the FSB has been working to try to strengthen the resilience of money market funds and at the European level, this work has mainly been conducted by the ESRB. See for example FSB (2021), *Policy Proposals to Enhance Money Market Fund Resilience*, Final report, October 2021, ESRB (2021*), Issues note on systemic vulnerabilities of and preliminary policy considerations to reform money market funds* (*MMFs),* July 2021, European Systemic Risk Board and *Recommendation of The European Systemic Risk Board of 2 December 2021 on reform of money market funds (ESRB/2021/9)*, European Systemic Risk Board.

[120] See, for example, *Financial Stability Report*, May 2023, Federal Reserve.

where these funds are major investors and for unit holders, as they often use money market funds for liquidity management. If money market funds in the United States and Europe experience problems, there is considerable risk that these would also spread to the Swedish financial system through various types of channels, for example via counterparties or investments in the same underlying markets. One direct channel for Sweden is that these funds invest in the major Swedish banks' issues of commercial paper in foreign currency.

Vulnerabilities among corporate bond funds risk adversely affecting corporate financing

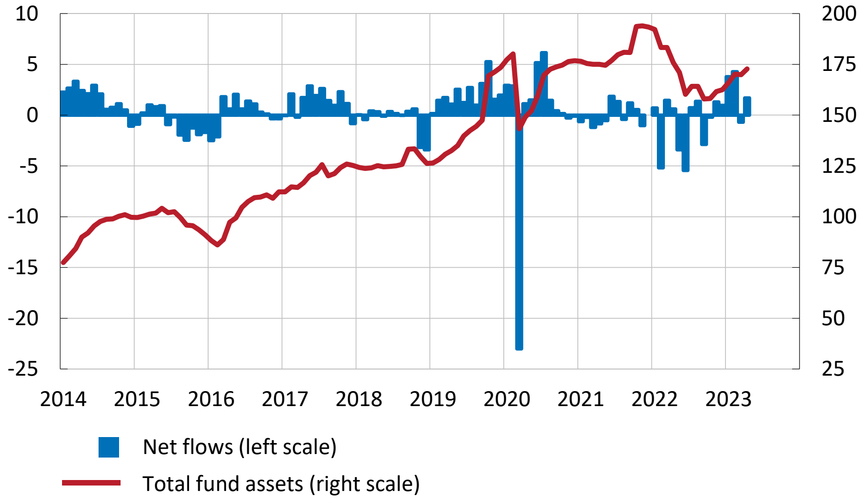
As the Riksbank has pointed out several times before, Swedish corporate bond funds are also sensitive to major outflows, as they, like money market funds, offer unit holders the possibility of daily redemptions while investing in less liquid assets. This vulnerability still remains. The funds' vulnerability to large outflows has also been highlighted in recent stress tests conducted by both Finansinspektionen and the IMF.[121]

At the beginning of the year, Swedish corporate bond funds experienced their largest net inflows since 2020 (see Chart 41). Inflows into these funds are favourable for companies that use the corporate bond market for their financing, as the funds can buy new issuances without having to sell parts of their existing holdings. However, the large inflows may also increase the risk of large redemptions if the market situation reverses. In that case, the companies' financing situation could be negatively affected as the funds may have to sell a larger amount of corporate bonds if they do not have sufficient cash.[122] Some companies have already faced higher financing costs as a result of the higher interest rates and are therefore particularly sensitive to further negative developments.

[121] See "Stress tests of funds' liquidity risks", *FI Analysis* no. 37, November 2022, Finansinspektionen, and *Sweden: Financial System Stability Assessment (FSAP)*, Country Report No. 2023/113, March 2023, International Monetary Fund.

[122] See also Chart A.7 in the Chart Appendix, which illustrates how the funds usually buy and sell bonds on inflows and outflows.

Chart 41. Net flows and total fund assets for Swedish corporate bond funds
SEK billion



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

Source: Macrobond.

2.6 Vulnerabilities and risks in the financial infrastructure

The availability of the financial infrastructure systems has generally been high, although incidents have affected it on individual days. In the medium term, there are risks to availability and the ability to make payments if a clear plan is not developed for Bankgirot's operations in light of the major changes the payment infrastructure is now facing. The international banking turmoil has had limited impact on the Swedish CCP's participants, but last autumn's turbulence on the electricity market has shown that there are risks with non-financial companies as CCP participants. The European Commission has therefore put forward a proposal on how to manage these risks.

Overall high availability despite occasional interruptions

As a result of the new Sveriges Riksbank Act, the Executive Board of the Riksbank has decided that the Riksbank shall oversee the Swedish Bankers' Association's operations Dataclearing, Getswish AB and Finansiell ID-teknik BID AB (BankID).[123] This oversight will be in addition to the oversight the Riksbank already conducts.

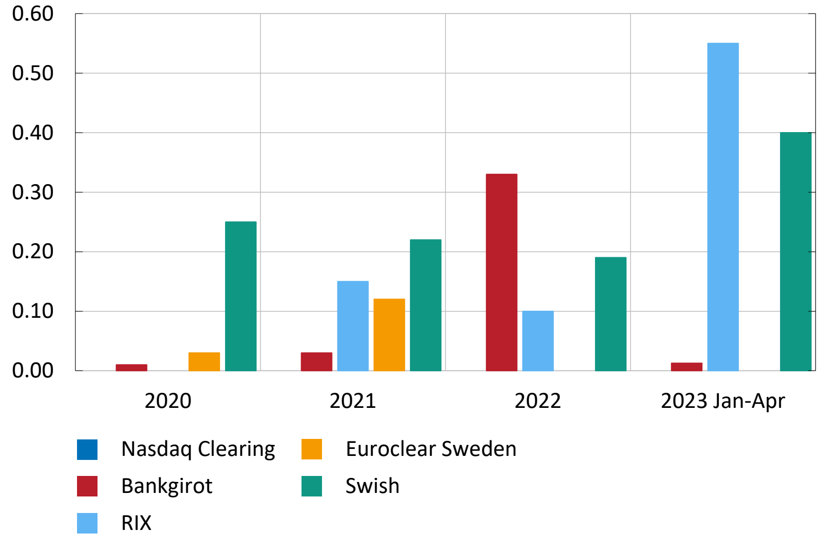
The Riksbank has a strong focus on the availability of the financial infrastructure systems in its oversight, as the systems must be available for payments and transactions with financial instruments to be carried out. The availability of the financial infrastructure systems has generally been high during the whole of 2022 and the first four-month period of 2023 (see Chart 42). However, there have been incidents that have had a negative impact on availability, either in whole or in parts of the system, during individual days. For example, RIX had an incident at the end of April that meant that operations could not be resumed within the two-hour target specified the international principles for financial infrastructure systems.[124] Beyond that, it is primarily the participants that enable Swish payments – Bankgirot, Getswish AB and BankID – that have experienced interruptions.

[123] See also the article "Financial stability in light of a new Sveriges Riksbank Act".

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

Chart 42. Interruptions to the Swedish infrastructure systems

Per cent



Note. 0 per cent shows that the system has been available the entire time without interruption. 0.2 per cent corresponds to an interruption of five hours over a period of one year. 0.2 per cent over a four-month period corresponds to about 1 hour and 40 minutes. Corresponding interruption times for Swish are about 17.5 hours and 6 hours respectively, as the service is available around the clock, every day of the year. The interruptions in Swish are calculated as the total interruption time for BankID, Getswish and Bankgirot's platform Betalningar i Realtid (Payments in Real Time).

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

Major changes in payment infrastructure create vulnerabilities

The company Bankgirot has been Sweden's only clearing organisation for payments for a long time. The banks, which own large parts of the Swedish payment infrastructure, have decided that it needs to be modernised. For several years, the idea was that the bank-owned company P27 would replace Bankgirot and similar solutions in other Nordic countries. However, in April 2023, P27 announced that it had withdrawn its licence application to Finansinspektionen. This means that it is currently unclear what will happen to Bankgirot and whether or not a new infrastructure will be established to take over. If the banks do not soon decide on a plan for the bank-owned part of the Swedish payment infrastructure, the ability to make retail payments may be negatively affected. It is therefore crucial that the banks develop a realistic plan to ensure that there is always at least one company in Sweden that can perform the central functions for retail payments.

The banks' investment in P27 has led to an inadequate focus on long-term investments in Bankgirot. The situation has also been affected by the fact that Bankgirot's board, which currently consists of P27's CEO and representatives of the owner banks, does not, in the Riksbank's assessment, fulfil the requirements of independence in international principles.[125] The requirements aim to ensure that the decisions made are well founded and with the company's best interests in mind. Deficiencies in independence may lead, for instance, to the risk that the board will not take decisions on risk management measures in a timely manner or to a sufficient extent. Two examples are that too little is invested in system development or that contracts with operations suppliers are not extended in good time before they expire. Overall, there are therefore risks that the functionality and efficiency of Bankgirot's system are not sufficient to meet the market's needs. In a situation where it is not possible to clear payments, financial stability would be negatively affected. The Riksbank has intensified its oversight of Bankgirot in view of the current situation and is closely monitoring developments.

Calmer in the markets affecting CCPs but this could change quickly

The Swedish central counterparty (CCP), Nasdaq Clearing, clears different types of financial instruments in its financial clearing and commodity clearing respectively. The recent turmoil in the international banking market has increased the turbulence in financial markets. However, it has not significantly increased the margin requirements for Nasdaq Clearing's participants in the financial clearing, mainly consisting of Swedish and international banks. This is in sharp contrast to the autumn of 2022, when many of Nasdaq Clearing's participants in commodity clearing faced significantly higher margin requirements.[126] The reason then was that the prices of electricity derivative contracts had risen sharply and become more volatile. Since then, electricity and energy prices have returned to more normal levels. This has contributed to a decrease in margin requirements and the number of intraday margin calls for the CCP participants (see Chart 43) to lower levels.[127]

However, the turbulence on the electricity market in the autumn showed that there are risks associated with non-financial companies being CCP participants, as these players do not have the same preparedness for sudden and large liquidity needs as financial companies. This may lead to a situation where they do not have sufficient liquid assets to meet the increased margin requirements. How these risks should be assessed and managed is currently being discussed at EU level. If CCP participants do not have preparedness for new market and price volatility, there are risks to financial stability.

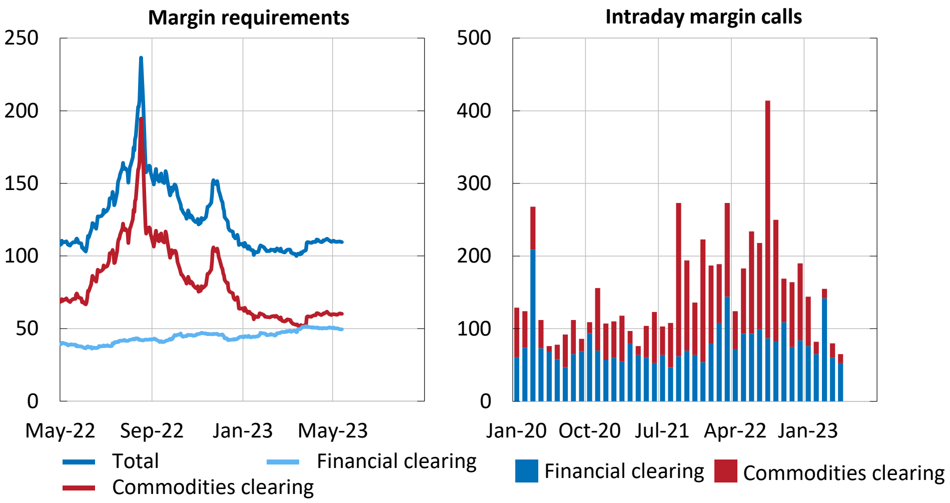
[125] The international principles that the Riksbank uses in its oversight of the financial infrastructure companies are the Principles for Financial Market Infrastructures, see *Principles for Financial Market Infrastructures,* April 2012, CPMI-IOSCO. For more information on the board of directors' responsibility in FMIs, see the article "The board's responsibility in an infrastructure company" in *Financial Infrastructure*, 2017, Sveriges Riksbank.

[126] For more information on the margin requirements faced by CCP participants, see the fact box "What does it entail to be a participant in a CCP?" in *Financial Stability* 2022:2, Sveriges Riksbank.

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

Chart 43. Margin requirements and number of intraday margin calls for Nasdaq Clearing's participants

SEK billion, number



Note. Left: Nasdaq Clearing's participants' total initial margin requirements for financial clearing and commodity clearing (including seafood clearing), respectively, and the sum of the requirements, in SEK billion. Initial margin is the collateral a participant posts to the CCP to cover any losses that may arise if the participant fails. Right: The number of intraday margin calls (IDMC) for Nasdaq Clearing participants. IDMC is when a participant has to post extra collateral during the course of a trading day to cover its risk exposure, if the risk in a participant's portfolio exceeds a predetermined level. Data up to 22 May inclusive.

Source: Nasdaq Clearing.

Continued strong focus on future regulation of European CCPs

In December 2022, the European Commission published a proposal to update the current EU regulation on central counterparties.[128] One element of the proposal aims to reduce the systemic risks that may arise from non-financial companies being participants in a CCP. These companies are not subject to the same liquidity and prudential requirements as financial companies. This issue was clearly illustrated by the electricity market turbulence in the autumn. Among other things, the Commission proposes increased requirements for CCPs to ensure that non-financial companies that are CCP participants have the capacity to meet margin requirements under stressed market conditions.

Another element of the Commission's proposal concerns the requirement for so-called active accounts for derivative transactions in euro and złoty. These are usually cleared in the clearing services of some of the UK CCPs, LCH Ltd and ICE Clear Europe Ltd. The proposal means that EU participants will have to clear a certain proportion of their derivative transactions in these currencies at a CCP in the EU. This proposal is in line with the Commission's ambition to reduce the dependence of EU participants on

[128] Council Regulation (EU) on OTC derivative contracts, central counterparties and trade repositories ([EU] 648/2012). The Act (2013:287) with supplementary provisions to the EU Regulation on OTC derivatives, central counterparties and trade repositories adapts Swedish law to the Regulation.

UK CCPs in the longer term and to increase clearing activity within the EU. The Riksbank's position is still that clearing at CCPs from third countries should be permitted under the same conditions as those of CCPs in the EU, provided that both supervision and legislation are equivalent to the EU's requirements for CCPs.

ARTICLE – Cyber risks and financial stability

The digitalisation of the financial sector has exposed its participants to cyber risks. In addition, the participants are closely interconnected both economically and technically. There is consequently a risk that a cyber incident happening to an individual participant could have consequences for the financial system's ability to maintain its basic functions. This means that cyber risks can also threaten financial stability. The individual participants in the financial sector must therefore have a high level of cybersecurity, but it is also important that the stability authorities contribute by ensuring that a systemic perspective is taken into account in the financial sector's work on cybersecurity. A systemic perspective is also required at the national level to increase society as a whole's resilience to cyber incidents.

Cyber risks can threaten the stability of the financial system

Digitalisation brings great benefits. But it also exposes the financial sector to cyber risks, i.e. risks that can have a negative impact on the IT systems used or on the data stored or transferred in the systems.[129]

International developments in recent years, not least the changed security situation in Sweden's neighbouring area, have also contributed to an increase in cyber threats for Sweden, as well as for participants in the financial sector.[130]

Concentration and interconnectedness can affect the stability of the entire financial system

The financial system consists of a multitude of participants and markets and a plethora of interconnections between them. Several factors in the structure of the system can contribute to its vulnerability to cyber risks. The concentration of economic functionality, IT systems and suppliers is one such factor. For example, the concentration of an important economic functionality among a small number of participants can increase vulnerability. This is because the entire functionality can then disappear from

[129] For a widely used definition of cyber risk and related concepts, see, for example, "FSB Cyber Lexicon", November 2018, Financial Stability Board.

[130] How a cyberattack could affect financial stability in Sweden is described by Elestedt, L. et al. "A cyberattack can affect financial stability", *Economic Commentaries* No. 8, 2020, Sveriges Riksbank.

the financial system even if only a few participants suffer an IT incident. Similarly, vulnerability can increase if different participants in the financial sector rely on the same or very similar IT systems, whether hardware or software. This is because if there is a weakness or vulnerability in a certain type of system, there is a risk that it will quickly affect considerable parts of the financial sector. Moreover, it may be the case that several different participants rely on the same provider of a certain type of IT service (such as a specific cloud service or a specific provider of IT operations) and that a cyber incident at this provider may have repercussions for several participants at the same time.

In addition to concentration, technical and economic interconnectedness among financial sector participants can also increase vulnerability. This is because IT incidents can spread from individual participants and IT systems to eventually affect financial stability.

In order to reduce systemic risks, financial sector participants must have a high level of cybersecurity.

A high level of cybersecurity is achieved by working in several different dimensions

To reduce the cyber risks to which the financial system is exposed, it is important that participants in the financial sector have a high level of cybersecurity. Achieving a high level of cyber security involves working in several different dimensions. For example, it is important that the IT systems have a high level of protection, that the participants in the financial sector have the ability to detect and respond to IT incidents and that they have the preparedness and ability to quickly and safely restart systems and restore data.

A high level of protection against cyber incidents in the IT systems reduces the risk that the systems, or data in the systems, will become inaccessible or that data will be inappropriately disseminated or modified. The IT systems that support the basic functionality of the financial system need to have protection that is designed to withstand cyberattacks on a par with those that can be carried out by state actors or state-sponsored actors. This high level of protection needs to be in place regardless of whether the financial company providing the basic functionality is responsible for the operation of the IT system or whether there is an external service provider.

In order to examine their systems and get a picture of how protection can be improved, it is important that participants continuously carry out different types of tests, such as penetration tests, both in individual systems and in the entire IT environment.

Regardless of the level of protection achieved in IT systems, it is virtually impossible to completely avoid IT incidents. However, it may be possible to limit the damage if one has the ability to detect and respond to IT incidents. For example, this may mean having a function that monitors IT systems 24 hours a day, every day of the year, and provides a clear and early warning if an incident is detected or if there are signs that could indicate that an incident is imminent. Such a function needs both access to information from the IT systems, such as security logs, and access to systems that analyse the information and immediately signal if signs of an IT incident are detected. Participants providing IT systems that have a direct impact on the basic functionality of the financial system may also explore the possibility of accessing advanced technical detection and warning systems.[131]

Having the ability to respond to IT incidents can mean, for example, that participants have access to resources that can continuously counteract cyber incidents regardless of the time of day or day of the year and that they have access to human resources that can investigate, at short notice, how the incident has arisen and what consequences it has had or may have.

As with the testing of protection in IT systems, it is important to continuously test and practice the ability to detect and respond to cyber incidents. For example, as part of such tests to examine both protection and the ability to detect and remedy cyber incidents, participants that are systemically important to the Swedish financial system can conduct threat-based penetration tests, known as TIBER tests.[132]

In the event of a serious IT incident, there needs to be a high level of preparedness and ability to quickly and safely restart systems and restore data that is reasonably certain to be correct.[133] This may mean, for example, that one has several updated backup copies of data and sometimes entire IT systems where at least one of the copies has such protection that it cannot be affected by the same IT incident as regular systems and other copies. One can also have routine descriptions of how IT systems should be restarted after a serious IT incident, along with routine descriptions of how data should be restored, even in a serious scenario where the regular IT environment is not available.

Just as it is possible to carry out different types of test to assess both the security and the ability to detect and fix problems in IT systems, it can be useful to carry out tests and exercises when it comes to restarting systems and restoring data from backup copies.

Financial sector stakeholders need to ensure that cybersecurity efforts continuously address these dimensions and that resilience to cyber risks is continuously enhanced.

[131] Finansinspektionen has previously indicated that the technical detection and warning system (TDV) of the National Defence Radio Establishment (FRA) could increase the cyber resilience of systemically important participants in the financial sector (see Report "Förstärkt digital motståndskraft hos företag i den finansiella sektor" [Strengthening digital resilience of financial sector companies], Finansinspektionen, 6 May 2022).

[132] TIBER is a framework for conducting threat-based penetration tests and has been implemented both at EU level (see e.g. TIBER-EU Framework, May 2018, ECB) and in Sweden (see *TIBER-SE Implementation Guide*, December 2019, Sveriges Riksbank) and other countries. The Riksbank has developed the Swedish implementation of the TIBER framework and coordinates the TIBER tests in Sweden.

[133] There are different guidelines on how long outages can be tolerated (see, for example, the summary in *Advancing macroprudential tools for cyber resilience*, February 2023, Financial Stability Board).

A systemic perspective is also needed to safeguard financial stability.

Action by individual participants is not enough

It is of great importance that all participants in the financial sector work continuously and over the long term to reduce cyber risks and increase resilience. But this is not enough to ensure that the resilience of the financial system as a whole is sufficiently high. As a complement, there also needs to be a system-wide perspective in the work. One reason for this is that cybersecurity can be seen as a common benefit in the financial system. This means that an initiative aimed at benefiting an individual participant can also have positive effects on the entire financial system's resilience to cyber incidents. When no systemic perspective is taken on cybersecurity, participants become encouraged to act from their own perspectives, which can result in too low a level of resilience in the system as a whole.

Systemic perspective in the financial sector

A first measure to safeguard the systemic perspective in the financial sector is to map how the system's various central economic functions are interrelated and how they, in turn, are dependent on different types of participants and IT systems. A second measure that contributes to the management of an IT incident is for the stability authorities, on the basis of this mapping, to form an opinion as to when an incident may go from being a concern for an individual participant to becoming a concern for them as well. By identifying, in good time, when an event risks affecting the entire financial system, the authorities can intervene and counteract the system-wide consequences.[134]

Cooperation within the financial sector makes it easier to establish a systemic perspective on cyber resilience. For the stability authorities (Finansinspektionen, the Riksbank and the Swedish National Debt Office), there are several cooperation forums that can contribute to a systemic perspective. For example, they cooperate on cyber issues within the framework of the Financial Stability Council. But cooperation between authorities and private actors is also important to strengthen resilience to cyber incidents in the financial system. Some collaboration forums have already been established, for example within the framework of the group for private-public cooperation in the financial sector (FSPOS). This forum deals with issues related to cyber security. This type of cooperation needs to continue to increase the resilience of the financial system to cyber risks and incidents.

Cooperation between critical sectors

It is not only the financial sector that is highly exposed to cyber risks. This also applies to many other critical sectors, several of which can also indirectly affect the stability

[134] For more on the tools known as the Systemic Impact Tolerance Objective (SITO) the Cyber Resilience Scenario Testing (CyRST) see *Advancing macroprudential tools for cyber resilience*, February 2023, ESRB.

of the financial system. Cybersecurity is consequently a matter that also requires co-ordination at the national level.

One initiative that could strengthen resilience to cyber incidents in society at large, and thus also in the financial system, is the creation of the National Cyber Security Centre (NCSC).[135] Currently, the NCSC's work takes the form of a collaboration between four authorities within the framework of their respective mandates. Recently, it has been proposed that one of the authorities, the National Defence Radio Establishment, be given responsibility for the future operations of the NCSC.[136] One positive aspect of such a proposal is that it would create the conditions for clearer responsibility and a clearer mandate for the centre's activities. It is important to include the financial sector in the NCSC's future work to safeguard the resilience of the financial system and society as a whole against cyber incidents.

[135] The NCSC is a collaboration between four authorities: the National Defence Radio Establishment, the Swedish Armed Forces, the Swedish Civil Contingencies Agency and the Swedish Security Service. The work of these four authorities in the NCSC takes place in close collaboration with the Swedish Defence Materiel Administration, the Swedish Police and the Swedish Post and Telecom Authority.

[136] See opinion editorial by U. Kristersson et al. (2023), 27 April, DN Debatt. "FRA får ta över ansvaret för Sveriges cybersäkerhet" [National Defence Radio Establishment may take over responsibility for Sweden's cyber security].

ARTICLE – New Sveriges Riksbank Act provides clearer mandate to promote financial stability

At the turn of the year, a new Sveriges Riksbank Act entered into force. It states that the Riksbank, as before, shall contribute to the stability and efficiency of the financial system. However, the new Act is clearer than the previous one about the objectives, tasks and powers the Riksbank has in this area. The Riksbank was already performing most of the tasks previously. These include oversight of the financial system and crisis preparation work. However, the new Act also gives the Riksbank certain new tasks and powers, such as extended possibilities to offer various forms of liquidity support for financial stability purposes in a crisis situation.

Objective - better conditions for cooperation and accountability

The new Sveriges Riksbank Act[137] is more extensive and detailed than the previous one. This applies particularly to the area of financial stability, where the previous Act had fewer and more general provisions, which meant that the Riksbank needed to interpret and specify its tasks to a greater extent.[138] Another change is that the new Act regulates the Riksbank's different areas of activity in separate chapters, which specify objectives, tasks and powers for the different areas of activity. This means, for example, that monetary policy, where there is a ban on taking instructions, is regulated in one chapter, while financial stability[139], where more cooperation with other authorities is possible, is regulated in another.

One purpose of the new structure is to facilitate cooperation and exchange of information with Finansinspektionen (supervisory authority) and the Swedish National Debt Office (resolution as well as public guarantee and support authority), which are also responsible for contributing to a stable and efficient financial system. Another purpose is to create prerequisites for legitimacy, accountability and control of the Riksbank's activities. [140]

[137] Sveriges Riksbank Act (2022:1568).

[138] See *The Riksbank and financial stability*, 2013, Sveriges Riksbank.

[139] Chapter 3 “The financial system”.

[140] Government Bill 2021/22:41, p. 74.

Clearer objective

According to the new Sveriges Riksbank Act, the Riksbank shall "without prejudice to the price stability objective, contribute to the stability and efficiency of the financial system, including the ability of the public to make payments".[141] In substance, the new wording of the objective corresponds well with how the Riksbank has interpreted the previous Act's provision that the Riksbank shall "promote a safe and efficient payments system"[142] , but the new wording is clearer. The financial system is judged to be stable and efficient when it can maintain its basic functions and is sufficiently resilient to continue to do so.[143] These basic functions are the mediation of payments, the provision of credit and capital and the management of risk.[144]

The wording of the objectives in the Act also specifically emphasises that the Riksbank has a responsibility to enable the public to make payments. Later in the Act, it is stated that this responsibility also applies during peacetime crises and times of heightened alert and this means that the Riksbank has been given more extensive preparedness tasks.[145] What these tasks include and how the Riksbank works with them is presented in the Payments Report 2022.[146] The wording of the objective also clarifies that the price stability objective, as before, has primacy over other objectives and provisions for the Riksbank's activities.

The task of supervising the financial system enshrined in law

The new Sveriges Riksbank Act gives the Riksbank a clear task of overseeing the financial system: "The Riksbank shall assess whether the financial system is stable and efficient, identify risks of severe disruptions or significant efficiency losses and report its assessments".[147] This is a new statutory task that means that the Riksbank has a formal obligation to make analyses and assessments in this area. However, the Riksbank has already been making these types of analyses and assessments for a long time and also reports them publicly. For example, the Riksbank has published a Financial Stability Report for around 25 years. In addition, the Riksbank regularly writes articles, gives speeches, responds to consultations and participates in international cooperation in this area.

The new Act also gives the Riksbank an explicit obligation to inform others of the risks that have been identified: "If the Riksbank considers that these risks[148] may affect the

[141] Chapter 3, Section 1, Sveriges Riksbank Act.

[142] Chapter 1, Article 2, second paragraph of the 1988 Sveriges Riksbank Act.

[143] Government Bill 2021/22:41, p. 216.

[144] SOU 2019:46, page 915.

[145] Chapter 5, Sveriges Riksbank Act.

[146] See *Payments Report 2022,* December 2022, Sveriges Riksbank.

[147] Chapter 3, Section 9, first paragraph, Sveriges Riksbank Act.

[148] Refers to risks of severe disruptions or significant efficiency losses.

activities of other authorities, it shall inform these authorities and other interested parties".[149]

The new act also gives the Riksbank the task of conducting broader monitoring of economic and financial developments, and identifying threats to sustainable development that affect the conditions for any of the Riksbank's various activities.[150] Within the framework of its responsibility for overseeing the financial system, the Riksbank shall therefore also endeavour to identify threats to sustainable development[151], such as climate risks, that could lead to severe disruptions or significant efficiency losses in the financial system.

Specific provision on oversight of financial infrastructure

The Riksbank provides a central system for payment settlement, RIX, which banks and other financial institutions use to make payments between themselves. It is the hub of the financial infrastructure. The RIX system is also closely linked to and dependent on the rest of the financial infrastructure, i.e. settlement, payment and clearing systems, accounting of financial instruments and trade repositories. The proper functioning of this system is crucial to the stability and efficiency of the financial system. This is an important reason why the Riksbank has been given a special task in the new Sveriges Riksbank Act to oversee the financial infrastructure.[152] The Riksbank's work in this area is thus anchored in an explicit legal provision.

One new feature is that the Riksbank shall also oversee "other operations that are of particular importance to the financial infrastructure in Sweden".[153] The Riksbank has decided, within the framework of this provision, to oversee the Swedish Bankers' Association's transfer system for payments, Dataclearing, Finansiell ID-Teknik BID AB and Getswish AB. However, the companies covered by this oversight may vary over time.[154]

Crisis preparation tasks now set out in law

The new Sveriges Riksbank Act also contains a new provision on the Riksbank's crisis preparation work: "The Riksbank shall have ample capacity to counteract severe disruptions in the financial system in Sweden. The Riksbank shall identify liquidity support measures that can be used to counteract such disruptions".[155] This means, for example, that the Riksbank shall identify possible crisis scenarios and the measures that

[149] Chapter 3, Section 9, second paragraph, Sveriges Riksbank Act.

[150] Chapter 1, Section 9, Sveriges Riksbank Act.

[151] Sustainable development refers to long-term environmental, social and economic development (Government Bill 2021/22:41, p. 82).

[152] Chapter 3, Section 8, Sveriges Riksbank Act.

[153] Ibid.

[154] See the Riksbank's decision ref.no. 2023-00498.

[155] Chapter 3, Section 10, Sveriges Riksbank Act.

could be appropriate in different situations. The provision also states that the Riksbank may also “participate in crisis preparation work in Sweden and abroad”.[156]

The requirements for the Riksbank's crisis preparation work are thus clarified in the Act. To be able to manage financial crises effectively, the Riksbank has already developed plans and procedures for measures that may need to be taken in crisis situations. The Riksbank also regularly conducts crisis exercises, both internally and together with other relevant authorities. In some cases, international crisis exercises are also held, particularly in the Nordic and Baltic countries, as these countries' banking systems are closely integrated and interdependent. Through such exercises, the Riksbank continuously tests and develops its crisis preparations.

Enhanced ability to provide liquidity support in times of crisis

If a severe disruption were to occur, or risk occurring in the financial system in Sweden, the Riksbank can offer liquidity support to counteract this.

If an individual financial company experiences liquidity problems, the Riksbank can, as before, offer special liquidity support, or emergency liquidity assistance as it is also known.[157] If, on the other hand, several financial companies or one or more markets are affected, the Riksbank can, under the new Act, offer what is known as general liquidity support. This may involve offering credit to several participants simultaneously on general terms, entering into repurchase agreements or buying and selling securities.[158] The Riksbank has previously been able to do this within the framework of its monetary policy mandate, but with the new Act the Riksbank will also be able to do this for financial stability purposes. However, the conditions for the measures differ somewhat depending on whether they are being taken mainly for monetary policy or for financial stability purposes.

The new Sveriges Riksbank Act also imposes new requirements on transparency regarding these measures: “If it is not inappropriate with regard to the stability or efficiency of the financial system, the Riksbank shall publish the liquidity support measures that the Riksbank will take to counteract severe disruptions in the financial system in Sweden and the detailed conditions for these”.[159] The Riksbank endeavours to maintain a high degree of transparency regarding its operations, and has also published information on its website about the types of liquidity support measures the Riksbank can take to counteract severe disruptions to the financial system in Sweden.

[156] Ibid.

[157] Chapter 3, Section 7, Sveriges Riksbank Act.

[158] Chapter 3, Section 6, Sveriges Riksbank Act.

[159] Chapter 11, Section 4, second paragraph, Sveriges Riksbank Act.

However, the detailed conditions have not been published but will be determined by the Riksbank based on the circumstances of the specific situations.[160,161]

Extended cooperation with other authorities

The Riksbank, like other authorities, has an obligation to cooperate with other authorities in its areas of activity.[162] In the financial market area, both Finansinspektionen and the Swedish National Debt Office have tasks that are close to those of the Riksbank, which makes cooperation particularly important. The new Act therefore contains a special provision stating that the Riksbank shall, as a main rule[163], give these authorities the opportunity to comment before decisions on important issues related to their respective activities.[164] As examples of such important issues, the preparatory work for the Act mentions decisions on general liquidity support or emergency liquidity assistance to a financial company.[165]

The previous Sveriges Riksbank Act also contained a provision on cooperation with Finansinspektionen. However, there was no corresponding provision for the Swedish National Debt Office. The inclusion of such a provision in the new Act is a natural consequence of the Debt Office's responsibility for resolution and preventative state aid, which are related to the Riksbank's activities. However, the Riksbank has also cooperated with the Swedish National Debt Office before. Cooperation takes place, for instance, within the framework of the Financial Stability Council, which includes representatives of the Government (Ministry of Finance), Finansinspektionen, the Riksbank and the Swedish National Debt Office. The Stability Council meets regularly and discusses financial stability issues and how financial imbalances can be counteracted.

[160] As financial crises are extraordinary situations, the Riksbank considers it inappropriate to specify the conditions more precisely in advance. For the measures to be effective, the Riksbank must consider and balance many different aspects. In addition to the short-term objective of supporting the financial system, the Riksbank also needs to consider the long-term effects. Excessively generous measures may lead to undue favour for certain agents and increased risk-taking in the market. The design of the measures is therefore adapted to counteract such effects.

[161] In addition to the liquidity support measures described in the running text, an amendment to the Act on Special Supervision of Credit Institutions and Securities Companies (2014:968) enables the Riksbank to introduce two insurance-like facilities, known as special liquidity and credit facilities. This legislative amendment is an adaptation to EU law and entered into force at the same time as the new Sveriges Riksbank Act. The new facilities mean that credit institutions can, for a fee and under certain other conditions, pledge assets that do not fulfil the criteria for high-quality liquid assets at the Riksbank. In exchange, the banks may include the amount they can borrow in these facilities in the Liquidity Coverage Ratio (LCR) buffer.

[162] Section 8 of the Administrative Procedure Act (2017:900).

[163] However, the Riksbank need not give Finansinspektionen and the Swedish National Debt Office the opportunity to comment if a decision is urgent. In this case, the Riksbank shall instead notify the authorities of the decision without delay. Chapter 3, Section 11 of the Sveriges Riksbank Act.

[164] For Finansinspektionen the requirement concerns key issues relating to the stability and efficiency of the financial system or affecting Finansinspektionen's supervisory activities. For the Swedish National Debt Office, the requirement concerns more important issues related to the authority's activities concerning resolution and preventative state aid. Chapter 3, Section 11 of the Sveriges Riksbank Act.

[165] Government Bill 2021/22:41, p. 111.

Reinforced information and evaluation requirements

According to the new Sveriges Riksbank Act, the Riksbank shall inform the public about both monetary policy and other activities,[166] which was not provided for in the previous Act. However, the Riksbank has for a long time endeavoured to communicate openly and clearly about its various activities, including financial stability issues. For example, the Riksbank publishes Financial Stability Reports twice a year, produces a number of other publications on financial stability issues and gives speeches in this area. Every year, the Governor of the Riksbank also participates in the Riksdag Committee on Finance's hearing on financial stability, together with the director generals of the other relevant authorities and the Minister for Financial Markets.

The new Act also means that the democratic scrutiny of the Riksbank's activities has been strengthened. The Riksdag Committee on Finance, the Swedish National Audit Office and the General Council of the Riksbank all receive extended scrutiny tasks. For example, the Committee on Finance is to evaluate target fulfilment and efficiency in all of the Riksbank's activities and not just in monetary policy as before. The Riksbank's obligation to report on its activities to the Riksdag Committee on Finance has therefore also been extended from only relating to monetary policy[167] to encompass all of its activities.[168]

In summary – a clearer mandate to promote financial stability

With the new Sveriges Riksbank Act, the Riksbank's objectives, tasks and powers in the field of financial stability are specified. The objective for the Riksbank's work in this area is clearer than in the previous Act, but corresponds well with how the Riksbank has interpreted the previous Act's overall provision for the area. Many of the tasks that the new Act specifies for the Riksbank's work on financial stability are already performed by the Riksbank. This applies, for example, to most of the tasks relating to oversight and crisis preparation work. However, a new power for the Riksbank is the ability in a crisis situation to take general liquidity measures also for financial stability purposes. In addition, the democratic scrutiny of the Riksbank's work on financial stability is strengthened, mainly through the Committee on Finance’s broadened scrutiny and evaluation remit.

The new Sveriges Riksbank Act thus clarifies that the Riksbank has important tasks to contribute to a stable and efficient financial system. The Riksbank shall work to *prevent* financial crises, among other things by identifying severe risks to the financial system and drawing attention to them. The Riksbank shall also *counteract and manage* financial crises, primarily by providing liquidity support to participants in the financial system, if necessary. The Riksbank also needs to have good planning and preparations for this.

[166] Chapter 11, Section 3, Sveriges Riksbank Act.
[167] Chapter 6, Section 4 of the 1988 Sveriges Riksbank Act.
[168] Chapter 11, Articles 1 and 2, Sveriges Riksbank Act.

Glossary

AT1 bonds: A high-interest bond that can lose some or all of its value or be converted into shares if the issuing bank becomes insolvent. Banks sell these bonds to increase their equity and thus fulfil the regulatory requirements on how much capital they must have in relation to their risks.

Basel III: A regulatory framework that applies to banks and that regulates capital requirements and liquidity requirements, among other things.

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

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

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

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

Commercial property: Commercial property is property owned in order to generate revenue via letting.

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

Core Tier 1 capital ratio: Common Equity Tier 1 in relation to risk-weighted assets.

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

Countercyclical capital buffer: A time-varied capital requirement aimed at providing sufficient capital in the banking sector for banks to use in a severe economic downturn. The countercyclical buffer rate refers to the level of the capital buffer.

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

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

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

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

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

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

Interbank rate (IBOR): The interest rate on unsecured loans that the banks offer other banks. STIBOR (Stockholm Interbank Offered Rate) is usually used to measure the Swedish interbank rate. STIBOR is used as a reference for rate-setting or pricing of derivative contracts.

Interest rate swap: An agreement in which usually one party pays a predetermined, fixed interest rate on a nominal amount and the other pays a variable interest rate for a fixed period of time.

LCR, Liquidity Coverage Ratio: Liquidity measurement defined by the Basel Committee that measures a bank's ability to deal with a stressed net cash outflow for 30 days. In simple terms, an LCR of 100 per cent means that a bank's liquidity reserves are adequate to enable the bank to manage an unexpected liquidity outflow for 30 days.

Liquidity: Measure of the ability of a company or organisation to meet its payment obligations in the short term.

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

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

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

Loan-to-income ratio: Total household loans in relation to disposable income.

Loan-to-value ratio: A borrower's debt in relation to the market value of the collateral for the loan. For a household with a loan where the home is pledged as collateral, the loan-to-value ratio corresponds to the debt divided by the market value of the home.

Macroprudential measure: A measure aimed at increasing the resilience of the financial system and mitigating the risks associated with households' high and growing debts. This includes capital requirements for banks, mortgage caps and amortisation requirements.

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

MFIs: Monetary Financial Institution, which is an umbrella term for banks, housing institutions and finance companies, among others.

Microdata: Information relating to individual objects such as persons or companies.

Mortgage cap: A limit on the size of a borrower's mortgage in relation to the value of the home.

Net interest income: Interest income from lending less interest expenditure for funding and deposits.

Net operating income: Rental income minus operating and maintenance costs and property tax.

Non-financial company: A company that mainly produces goods or non-financial services. Normally, non-financial companies are simply referred to as companies.

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

Required rate of return: The return that owners require on an investment, which reflects market rates, risk and expectations of future value.

Return on investment: Synonymous with return and shows how a business generates capital gains. In other words, return on investment describes how profitable a company is.

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

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

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

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

Stagflation: An economic situation characterised by low growth, high inflation and high unemployment.

SWESTR: A fully transaction-based reference rate calculated and published by the Riksbank.

Swing pricing: A liquidity tool for investment funds whereby redemptions from unit holders take place at a slightly lower price, or purchases occur at a slightly higher price, than the unit value calculated in the customary way. In Swedish, swing pricing is sometimes referred to as adjusted sales and redemption prices.

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

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

SVERIGES RIKSBANK
Tel +46 8 - 787 00 00
registratorn@riksbank.se
www.riksbank.se

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