



FINANSINSPEKTIONEN

Stability in the Financial System

04 June 2020



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Foreword

As this is being written at the beginning of June 2020, the world economy is in a deep recession and the financial system has been upended. All because of something people hardly even thought about a few months ago. This is often how it is with crises – they occur for unexpected reasons and at unexpected times – and they almost never can be predicted.

But if there is resilience, there is also a possibility of being able to manage severe shocks. This is true in all areas of society, which has become clear the past few months, and particularly in the financial sector. We were able to learn from earlier crises, and we steadfastly built up both preparedness among authorities and resilience within the financial sector to ensure that we were better equipped to handle the next crisis.

We are now drawing on these reserves. More specifically, we have clarified that banks may temporarily fall below the liquidity coverage ratio and that insurance companies should use their buffers. It is also natural for banks to now use the substantial capital buffers they accumulated to continue their lending activities. To encourage this, FI also lowered the so-called countercyclical buffer rate to zero. All of these decisions help the financial sector support the economy during the crisis. We have also allowed households the possibility of pausing their amortisation payments, which helps maintain demand in the economy. Even financial firms need to do what they can and postpone dividends until the uncertainty surrounding the economic impact has subsided.

The handling of the crisis will place high demands on both firms and authorities. It is important to remember that we are still in the middle of the crisis, and the risk that it will be very deep and protracted cannot be ruled out. So far, we can say that the powerful measures taken by governments, central banks, and supervisory authorities during this first phase have stabilised the financial system and its functions. And the investments in financial resilience in recent years are helping us handle the crisis.

Stockholm den 4 juni 2020



Erik Thedéen
Director General

Summary

Sweden is relatively well equipped for the prevailing crisis. The economy has been strong for several years and government finances are good. However, there are also some vulnerabilities. Risk-taking has been high for a long time, and asset prices have been pushed upward. Debt has increased for many households, even if Finansinspektionen's (FI) measures have increased their resilience. Debt has also increased among non-financial firms, and over the past few years, FI has raised the commercial real estate sector and the banks' exposure to this sector as a particular risk.

As the coronavirus spread across the world, prices were fluctuating dramatically on the financial markets. A lower willingness to take on risk combined with uncertainty about firms' creditworthiness contributed to the fall in market liquidity on the corporate bond market. This has made it more difficult for firms to raise funding. During the spring, governments, central banks, and supervisory authorities implemented significant measures to dampen the economic impact and secure financial stability. These measures helped reduce the uncertainty on the financial markets. However, the pandemic has resulted in an exceptional real economic stress, and there is a risk of more price fluctuation in the future.

The extreme price fluctuations have had an impact on Swedish insurance undertakings and occupational pension institutes, but solvency continues to be stable. The firms have also not needed to make any major changes to their holdings, which otherwise could have amplified the price fluctuations. FI makes the assessment that they are able to continue to withstand major movements within the financial markets.

The major Swedish banks entered the crisis with satisfactory capital buffers and good profitability. Therefore, they are well positioned for assisting firms and households with loans during the economic downturn. To improve the banks' ability to continue to contribute to the credit supply, FI lowered the countercyclical buffer rate to 0 per cent on 16 March. The buffer rate can be expected to remain at this level at least until 16 March 2022. Any increases to the buffer in the future will be made gradually as needed given the systemic risks.

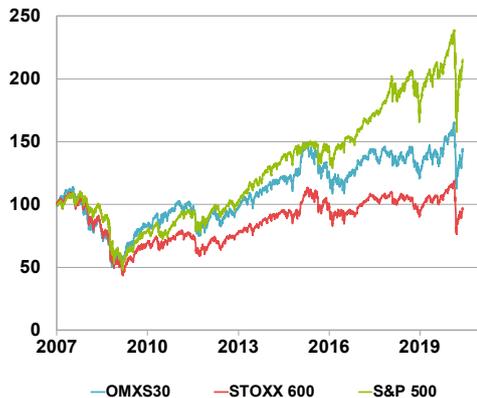
So far, the crisis has had a limited effect on the banks' capital, but the capital situation could deteriorate in the future. The credit quality of issued loans will be the deciding factor, which in turn is highly dependent on how deep and drawn-out the economic downturn is and the extent to which government measures can help the banks' borrowers ride out the storm. If the economic downturn persists and the financing costs increase significantly, commercial real estate firms may

experience problems. This, in turn, can impact the banks, which have large exposures to these firms. To ensure resilience to a weaker economy, banks should wait to distribute dividends until the uncertainty surrounding the impact of the crisis has subsided.

The pandemic has reverberated around the world

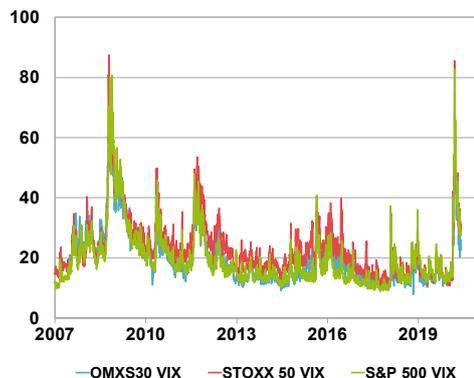
Many countries have adopted measures to limit the spread of the coronavirus that have entailed widespread societal lockdowns. This in turn has led to sharp downturns in many of the world's economies and created turbulence on the financial markets. Even if the shock has primarily hit the real economy, financial firms are also being affected, and financial stability may be at risk. Governments, central banks and supervisory authorities have therefore implemented extensive measures to support the economy and maintain financial stability.

1. Equity index fell sharply
Index, 01/01/2007 = 100



Source: Refinitiv Datastream.

2. Volatility increased rapidly
Percentage points



Sources: FI and Refinitiv Datastream.

Note: Implied volatility, expected annual change in price over next 30-day period. OMXS30 VIX is an average of Datastream OMXS30 Index Continuous Call and OMXS30 Index Continuous Put.

The spread of the coronavirus has caused suffering for people all over the world, and powerful measures have been taken to reduce the spread of the virus. Under these measures, economies have instituted varying degrees of lockdown, thereby causing an exceptionally strong shock to the real economy. This crisis is different from the global financial crisis in 2008–2009. Then, the crisis originated in the financial system and spread to the real economy. Now, the shock has rattled the real economy, which by extension could threaten financial stability.

TURBULENCE IN THE FINANCIAL MARKETS

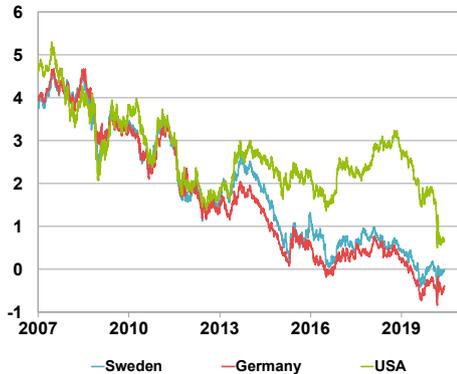
As the coronavirus began to spread globally at the end of February, market participants became concerned about the economic impact of the pandemic. This led to turbulence on the financial markets, and prices of riskier assets fell. Share prices fell sharply in Europe, the USA and Sweden (Diagram 1 and “Stability in the financial markets”). The implied volatility, which is a measure of the uncertainty surrounding future developments on the equity market, increased sharply (Diagram 2). At the same time, the price of oil fell, which further contributed to the stress on the financial markets.

Uncertainty on the financial markets led to an increase in demand for more secure assets, which meant that prices for them rose. Treasury bond rates with longer maturities fell in countries viewed as being safe havens, particularly in the USA (Diagram 3).

ECONOMY IS EXPECTED TO CONTRACT

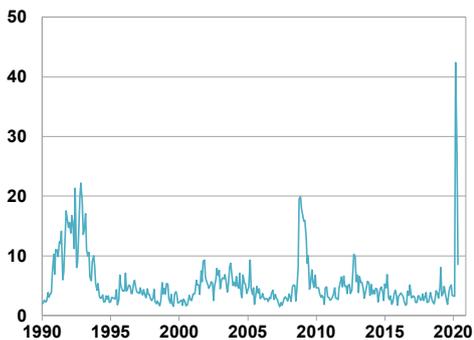
Societal lockdowns to reduce the spread of the virus brought an abrupt stop to economic activity around the world. The demand side is especially affected. Household demand is slowing from the fear of becoming infected and the recommendations, and sometimes requirements, on social distancing. In many countries, consumption slowed as stores, restaurants, bars and cafés were closed. Even in Sweden, where these locations have remained open, the number of customers decreased and the service sector took a hard hit. Higher unemployment, or a fear of

3. Ten-year treasury bond rates fell
Per cent



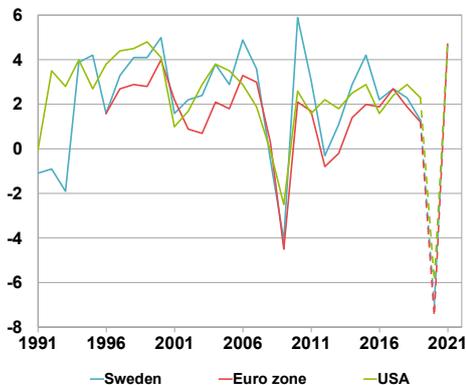
Source: Refinitiv Datastream.
Note: 10-year treasury bond rates.

4. Number of announced potential redundancies increased significantly
Thousands



Sources: Swedish Public Employment Service and Refinitiv Datastream.
Note: Number of new announcements of potential redundancies on monthly basis.

5. GDP growth is expected to be lower than during the financial crisis in 2008–2009
Annual GDP growth, per cent



Sources: IMF and the National Institute of Economic Research (NIER).
Note: Dotted lines are based on NIER's base scenario from 29 April for Sweden and IMF's forecasts from 14 April for the Euro zone and the USA.

becoming unemployed, may also contribute to households slowing their consumption. This uncertainty also affects the housing market, and house prices slowed as the pandemic was emerging.

Within the manufacturing industry, production has been impacted by not only lower demand but also supply shocks since global production chains have been disrupted. This has impacted, among other aspects, deliveries of input goods, which contributed, for example, to a number of factories in the vehicle industry closing temporarily. This in turn has knock-on effects for production among subcontractors. Moving forward, lower global demand will most likely affect Swedish exports, where the vehicle industry, non-electrical machines and telecom products are important. Medical products are also a significant export good, but it is currently difficult to know how demand for such goods will be affected.

Due to falling demand and a reduction in income, several non-financial firms have experienced greater liquidity needs, which has been evident at the banks (see “Stability in the banking sector” and “Corporate and household debt”).

There has been an extensive impact on the labour market in most countries, including Sweden. The number of announcements of potential redundancies rose sharply in March, but has since slowed, in part due to the implementation of the system for short-term furloughs (Diagram 4). In March, April and May, around 78,000 people received notice of potential redundancy. The number of bankruptcies has also increased, even if some of the firms that declared bankruptcy had a weaker financial position already before the pandemic broke out.¹ However, all announcements of potential redundancies are not due to bankruptcies, and not all such announcements result in actual lay-offs. The number of new newly registered unemployed at Arbetsförmedlingen, the Swedish Public Employment Service, has also increased sharply, though. Unemployment was at 8.5 per cent at the end of May compared to 7.4 per cent at the beginning of the year.

Economic analysts are emphasising how difficult it is to predict the impact the current situation will have on the economy. It is not clear how much the measures that were implemented to reduce the spread of the virus will slow economic activity. It is also not clear when all of the measures can be withdrawn and how quickly thereafter an economic recovery could begin. GDP growth is expected to be negative in 2020 in Sweden, the euro zone and the USA (Diagram 5). Currently, many analysts are estimating in their base scenarios that the

¹ In March and April, the number of bankruptcies increased by 19 and 30 per cent, respectively, compared to the corresponding months in 2019. In May, the increase in the number of bankruptcies was lower, increasing by 5 per cent compared to the same month last year. According to statistics from the credit reference agency UC.

Swedish GDP will contract by around 7 per cent in 2020.² This is a deeper downturn than during the financial crisis in 2008–2009. At the same time, many analysts are also taking the position that the negative risks are substantial and it is possible that the downturn will be even deeper.

In order to assess the impact of the coronavirus, FI has used a macroeconomic scenario in this report (see “Macrofinancial scenario to assess the impact of the crisis”). The scenario is used as a basis for scenario analyses that highlight the potential impact on banks and the real estate sector. Scenario analyses are one of several ways to test resilience based on different conceivable external conditions. In other words, they do not predict the future.

Macrofinancial scenario assesses impact of the crisis

The macrofinancial scenario that is used in this report is based on the base scenario published by the National Institute of Economic Research (NIER) on 29 April 2020. According to the scenario, GDP is expected to contract by 7 per cent in 2020 and then increase by 4.8 per cent in 2021. Average unemployment will increase to 10.2 per cent this year and to 11.0 per cent next year. Since the major Swedish banks also have relatively large exposures to other Nordic countries and the Baltic countries, the scenario uses the forecasts of the International Monetary Fund (IMF) for economic growth in these areas. In the Nordic region, GDP growth is expected to be -6.3 per cent in 2020 and 4.0 per cent in 2021. The corresponding figures for the Baltic region are -8.1 per cent and 8.1 per cent, respectively.

In addition to the scenarios from the NIER and the IMF, FI makes assumptions about the development of a number of variables. For example, house prices and the prices of commercial real estate are expected to fall by 7.9 per cent and 17.0 per cent, respectively, in 2020. In 2021, house prices will fall an additional 0.2 per cent, while commercial real estate prices will increase by 9.0 per cent. It is assumed that share prices will fall by 9.6 per cent this year and then increase by 11.1 per cent next year.

EXTENSIVE MEASURES HAVE BEEN TAKEN

In order to dampen the economic impact of the coronavirus pandemic, governments, central banks, and supervisory authorities have taken extensive measures. The pandemic appears to have slowed in Europe and the USA, and several countries have begun to lift the restrictions they had previously implemented. As a whole, this has helped decrease the uncertainty on the financial markets, and some asset prices have increased sharply from earlier lows.

² IMF (-6.8 per cent, 2020-04-14), NIER (-7.0 per cent, 2020-04-29), the Riksbank (-6.9 per cent, 2020-04-28).

Governments in various countries have focused on limiting the pandemic's damages to the economy by supporting demand and implementing measures that target both households and firms. These measures include short-term furloughs and increased unemployment compensation for individuals as well as reduced costs and direct support for firms.

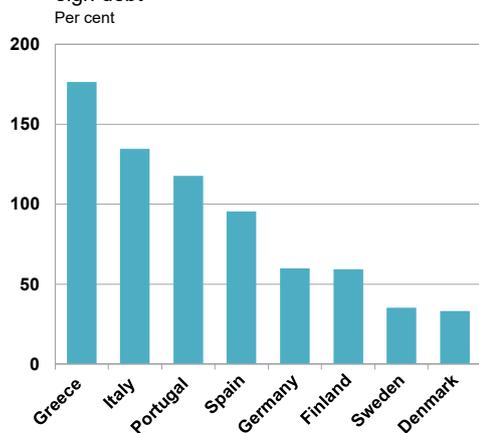
Financial firms and markets have also received support in order to ensure that banks and investors can continue to provide households and viable firms with loans and financing to bridge the crisis. Governments have therefore introduced credit guarantees on loans to firms to reduce the credit risk for banks and encourage lending.³ Central banks have provided liquidity to the financial system through lending programs to facilitate banks' credit supply to non-financial firms and expanded quantitative easing.⁴ Many central banks have also started to buy corporate bonds. Supervisory authorities lowered capital requirements and clarified that the ongoing crisis is an example of a situation where the liquidity coverage requirement (LCR) may be breached in order to provide capacity for lending to households and firms. FI has done this as well. Table 1 below summarises the major measures FI implemented during the spring. In Sweden, the Swedish National Debt Office also extended the phase-in period for the banks to meet the minimum requirements on bail-inable debt with own funds and subordinated debt.⁵

3 In Sweden, the Government is guaranteeing up to 70 per cent of the loan amount for new loans to small and mid-sized firms via commercial banks. Almi, Exportkreditnämnden (EKN) and Svensk Exportkredit (SEK) were given enhanced guarantee and lending possibilities. Firms that lost at least 30 per cent of their net sales can receive direct support temporarily, the size of which varies between 22.5 and 75 per cent of the firm's fixed costs, excluding salaries. Firms in particularly vulnerable industries can temporarily receive rent support for at most 25 per cent of their original rent. In addition, firms may receive a reduction in social security expenses and defer tax payments temporarily. The Government is temporarily taking over the responsibility for sick pay, it has implemented more generous furlough support, the rules for unemployment have been changed to include more people, and compensation has increased.

4 The Riksbank, for example, offers banks borrowing facilities of up to SEK 500 billion that they in turn can lend to firms. The group of counterparties has increased to give more banks and credit institutions the possibility of participating in this programme. The interest rate in standing lending facilities has been lowered. Quantitative easing was increased to SEK 300 billion and includes treasury, municipal, and housing bonds as well as covered bonds and securities issued by non-financial firms. The Riksbank offers loans up to USD 60 billion to the banks.

5 /// Minimum Requirement for Own Funds and Eligible Liabilities (MREL). The period was extended from 1 January 2022 to 1 January 2024.

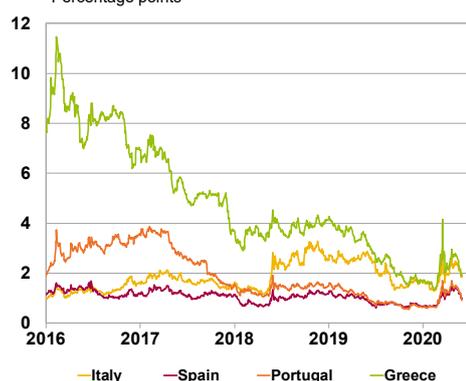
6. Several countries already have high sovereign debt



Source: Eurostat.

Note: Consolidated sovereign debt in relation to GDP. Data from 2019.

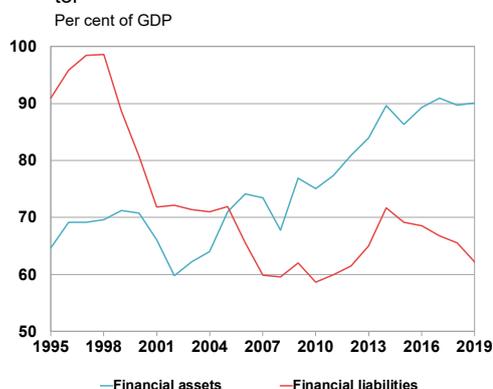
7. Interest rate differential for more vulnerable economies' treasury bonds has increased



Source: Refinitiv Datastream.

Note: Interest rate differentials for ten-year government bonds in a number of countries compared to Germany.

8. Financial liabilities decreased in public sector



Sources: NIER and Statistics Sweden.

Table 1. FI has taken extensive measures

Date	Measure	More information
16 March	The countercyclical buffer rate for banks is lowered from 2.5 to 0 per cent.	Stability in the banking sector
16 March	FI clarifies that the ongoing crisis constitutes the type of situation where the LCR requirement on both an individual currency and all currencies may be breached.	Stability in the banking sector
20 March	FI communicates that insurance undertakings and occupational pension institutions should now begin to use their buffers.	Stability in the insurance sector
24 March	FI communicates that banks and credit market companies are temporarily expected to stop issuing dividends in order to safeguard their resilience and lending capacity.	Stability in the banking sector
14 April	Banks may grant exemption from the amortisation requirements to all new and existing mortgagors until 31 August 2021.	Corporate and household debt

Note: More detailed information about all implemented measures is available at FI's website.⁶

FINANCIAL STABILITY KEY FOR FAST RECOVERY

The global economy is experiencing the sharpest downturn since the 1930s. At the same time, this economic crisis is different from earlier crises since it was triggered by extensive restrictions and changed behaviour to limit the spread of a virus rather than imbalances in economies or the financial system. Most analysts therefore assume the recovery will be relatively quick. One of the reasons for this is the financial measures that were implemented. Even if the measures were necessary, they still increase the pressure on public finances. Already before the coronavirus pandemic there were concerns about the high level of sovereign debt in several euro-zone countries, including Italy, which was one of the countries hit the hardest by the pandemic (Diagram 6). Sovereign debt will now increase further at the same time as economic activity, and thus also tax revenue, decreases. Concerns about the economies of the more indebted countries were visible in initial increase in the interest rate differential compared to the German treasury bonds (Diagram 7).

Sweden is relatively well equipped, but there are vulnerabilities. In Sweden, the economy entered the crisis in a better position than the more indebted countries in the euro zone. The Swedish economy has been booming for several years. Combined with broad political unity regarding the importance of strong government finances, the debt in the public sector has been low. The public net wealth, which is the difference between financial assets and liabilities, has been strengthened through increased assets and decreased liabilities (Diagram 8). As a result, there is considerable room for the government to handle both an increase in expenses and reduced income as a result of the pandemic and to introduce fiscal measures to reduce the economic im-

⁶ The information has been compiled here: <https://www.fi.se/en/published/coronavirus/>

pact. It is hard to overestimate the importance of strong public finances in a severe economic crisis since they give the Government the possibility of managing costs for society that participants in the private sector cannot handle.

Despite this strong starting point, there are vulnerabilities in the Swedish economy that could result in a severe economic downturn spilling over into the financial system and threatening financial stability. The strong economic development and low interest rates of recent years have led to higher risk-taking among various market participants, which has put upward pressure on shares and other financial assets as well as residential and commercial property. Asset prices therefore had further to fall when the coronavirus pandemic broke out. At the same time, many households and non-financial firms have taken on high debt (see “Corporate and household debt”). FI has focused in particular on the high debt among households and in the commercial real estate sector and taken measures to reduce these vulnerabilities.⁷

A balancing act for the financial system

A well-functioning financial system can slow the economic recession and support the recovery when the pandemic has subsided by providing liquidity and financing to firms and households during and after the crisis period. It is therefore good that the insurance companies and large banks entered the crisis with substantial resilience in terms of their solvency and capital buffers, respectively (see “Stability in the insurance sector” and “Stability in the banking sector”).

To maintain the supply of credit, FI lowered the countercyclical buffer rate for banks to 0 per cent (see “Stability in the banking sector”). In this way, it is possible to counteract the risk of a credit crunch, which often arises during economic downturns. Together with the measures implemented by the Government and the Riksbank, the banks are able to lend more.⁸ However, this does not mean that all firms will be granted loans. Some firms will not be viable in the long run. It is therefore important that banks continue to conduct thorough credit assessments to avoid unnecessary credit losses. However, it is also of central importance that the banks not be too cautious in their assessments. Firms that have a stable financial position in the long term but temporarily are in need of support must have the possibility of bridging the crisis. This is crucial to avoid making the economic downturn worse, which could in turn lead to credit losses that could have been

⁷ The mortgage cap was introduced in 2010, and the risk-weight floor for mortgages in 2015. The first amortisation requirement was introduced in 2016, and the stricter amortisation requirement in 2018. For more information, see *The Swedish Mortgage Market 2020*, April 2020, FI. In January 2020, FI decided on an additional capital requirement for the banks' exposures in their lending to the commercial real estate sector. For more information, see the memorandum *Increased capital requirements on bank loans for commercial real estate*, January 2020, FI. A summary is available in English.

⁸ See more information about the measures in footnotes 3 and 4.

avoided. It is therefore in the banks' collective interest to maintain the supply of credit. In other words, the banks are balancing sustainable, long-term behaviour against bridging what is hopefully a temporary crisis.

Considerable uncertainty

Sweden is a small, open economy that is strongly influenced by the international economic development, and there is considerable uncertainty in both Sweden and the rest of the world about future development.

The impact of the coronavirus pandemic will worsen the situation in the European banking sector, which still has not completely recovered from the euro crisis. For many European banks, the share of non-performing loans has decreased over the past few years, but there is a tangible risk that this share will increase again if the banks' borrowers start to experience payment problems. The profitability of these banks was already low before the outbreak of the pandemic, as well, and it will now be under more pressure. At the same time, many banks also have significant exposures to treasury bonds of highly indebted countries. If deteriorating government finances in already debt-laden, euro-zone countries in the long run trigger a new debt crisis, the economic development in Europe could slow even more. This would place already weak European banks under additional pressure, which could have consequences for the Swedish economy and thus the Swedish financial system.

But the uncertainty is broader than that. The length of the lockdowns to reduce the spread of the virus and the measures taken to mitigate the economic impact of the lockdowns are key. The impact on households and non-financial firms depends on developments moving forward. Since the situation is unique, there is considerable uncertainty about the future and the final impact. Currently, no one knows what will happen with the pandemic: if the virus will start spreading more rapidly again and if more restrictions will be needed. This also makes it difficult to determine how long the implemented fiscal measures will need to stay in place. The measures are also costly, and it is unclear how long it is sustainable to maintain them. Regardless of when the measures are rolled back, this roll-back will create challenges, and for financial stability as well.

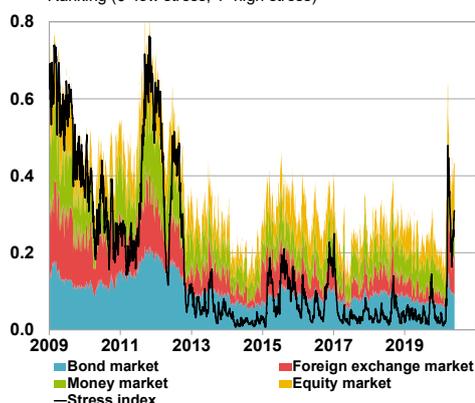
Even when the coronavirus pandemic is over there is no guarantee that everything will return to the way it was before. The crisis may have triggered far-reaching structural changes in the global economy. Households may change their consumption patterns. Firms may need to make changes to their operations, for example to production chains or in terms of the size of the financial buffers they choose to have. If households and firms change their behaviour, this in turn could have an impact on the financial system. However, it is currently impossible

to know which changes might occur and how large their impact could be.

Stability on the financial markets

Risk-taking on the financial markets has been high for several years. The coronavirus pandemic over the past few months has caused turbulence and made prices on the financial markets drop. Some sectors have already started to recover, and share prices have increased. Moving forward, however, there is a risk that the economic downturn could result in renewed turbulence and additional price drops.

9. High financial stress
Ranking (0=low stress, 1=high stress)



Sources: Bloomberg and Sveriges Riksbank.

Note: The Swedish stress index was created by Sveriges Riksbank using a method similar to that used by the ECB for the European stress index. See Johansson and Bonthron (2013), "Further development of the index for financial stress for Sweden", Economic Review 2013:1. Sveriges Riksbank. Last observation 2020-05-25.

10. Risk premiums have increased sharply
Percentage points



Source: Refinitiv Datastream.

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

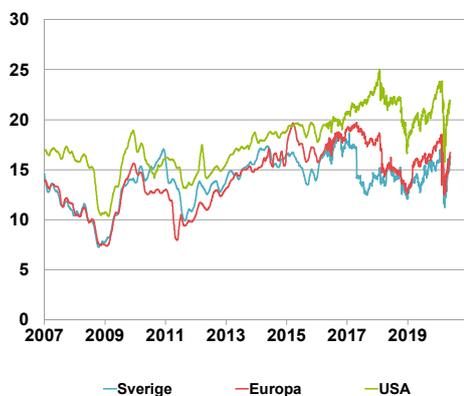
INCREASED STRESS AND EXTREME PRICE MOVEMENTS

The financial markets have featured low interest rates, low volatility and good economic conditions for several years. Investors have been willing to take on risk, which has resulted in rising asset prices and squeezed risk premiums. Under these conditions, vulnerabilities have been building up.

Since the coronavirus began to spread globally, the uncertainty regarding the economic conditions has increased dramatically, which also led to considerable uncertainty on the financial markets. This has been apparent, for example, in the sharp increase in stress levels during the first quarter in several financial sectors (Diagram 9). Prices fell sharply on the stock market and corporate bond market. Price movements on the currency market were also extreme. This uncertainty and stress contributed to a decrease in risk-taking, and demand for more secure assets increased (see "The pandemic has reverberated around world"). The outflow from various funds, primarily equity funds and corporate bond funds, also increased sharply. The functionality of the credit markets have been gradually deteriorating, and risk premiums in the corporate bond market have skyrocketed (Diagram 10). There has been very high demand in the currency market for USD, which is considered to be a safe currency during crises. This high demand has created difficulties for some market participants to obtain access to financing in USD.

Powerful monetary and fiscal policy measures around the world have helped stabilise the financial markets, and the most extreme turbulence has subsided even though stress levels are still elevated. Despite the sharp economic slow-down on a global scale, share prices in the form of P/E ratios have risen again after a temporary dip. They are now starting to approach pre-coronavirus pandemic levels (Diagram 11). There is thus a risk that turbulence will return and prices will fall again. A future roll-back of the measures will probably also affect the financial markets. In the longer term, the pandemic could lead to changes in how households and firms behave (see "The pandemic has reverberated around the world").

11. High stock market valuations despite economic slowdown
P/E ratio



Source: Refinitiv Eikon.

Note: P/E stands for Price/Earnings and refers to the price per share in relation to earnings per share for companies on the US, European and Swedish markets. 30-day moving average.

PROBLEMS ON THE CORPORATE BOND MARKET

Investors' previous willingness to take on high levels of risk has been expressed in part in the high demand for corporate bonds. This has resulted in cheap financing for firms, and the Swedish market for corporate bonds has grown rapidly. A large share of the firms that raise financing in this way are real estate companies (see "Corporate and household debt").

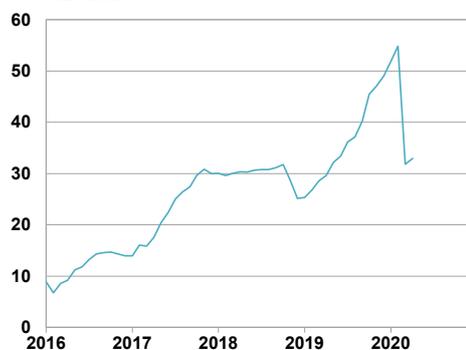
As restrictions were introduced to limit the spread of the coronavirus, investors have become more uncertain about firms' creditworthiness. Investors have therefore sought more liquid assets, such as government bonds. Together with the decline in investors' willingness to take on risk, this has made it difficult for firms to finance and re-finance themselves on the corporate bond market. Issued volumes decreased in March, and financing costs increased sharply for those that were still able to issue bonds. Difficulties for firms to raise financing on the securities market has resulted in a number of firms turning to banks for financing through bank loans (see "Stability in the banking sector").

In March, when the problems arose on the corporate bond market, it also became difficult for investors to obtain a reliable price indication. In many cases, the indicative prices showed by banks and investment firms were not in line with the actual trading prices for bonds. As a result, a number of Swedish fund management companies decided to postpone the redemption and sale of fund units for several days (see "Corporate bond funds, large outflows and valuation uncertainty").

Uncertainty about firms' creditworthiness and the risk of impaired profitability, in other words, contributed to a decrease in the market value of corporate bonds, and in some cases this decrease was substantial. Due to the worse conditions for firms, credit rating agencies lowered the ratings for some firms' creditworthiness. Six months ago, in its last stability report, FI raised the issue of the rising share of corporate bonds with a low or no credit rating. This situation has further deteriorated. Internationally, there is a concern that lowered credit ratings could lead to widespread redemption in funds, and the funds will then be forced to sell their assets. This could occur, for example, if the funds' investment mandate prevents them from holding bonds below a certain credit rating.

Despite extensive problems within the corporate sector, issue volumes on the corporate bond market have increased again, and firms' possibilities for raising financing have improved slightly. However, there is considerable uncertainty about the future, and there is a risk that the impact of the pandemic could cause problems on the corporate bond market.

12. Large flows out of corporate bond funds
SEK billion



Source: Swedish Investment Fund Association.

Note: Refers to accumulated net flows.

Corporate bond funds, large outflows and valuation uncertainty

In 2019, corporate bond funds experienced large inflows. This was largely due to interest from investors trying to find higher returns than what they could get from, for example, government bonds. New issuers entered the market, and the number of funds that invest in corporate bonds increased, as has the assets under management.

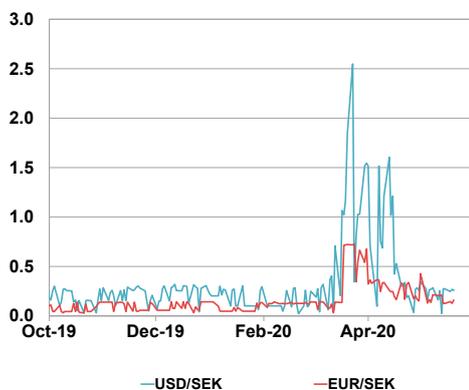
In March, when uncertainty on the financial markets was on the rise due to the spread of the coronavirus, there were large flows away from the corporate bond funds (Diagram 12). This put fund managers under pressure to sell their holdings to make payments. The Swedish and Norwegian markets for corporate bonds began to falter as the buyers disappeared, at the same time as the funds were forced to sell. The actors that normally set the bond prices for buyers and sellers increasingly withdrew. The indicative prices published during this period turned out not to be in line with what the prices buyers were actually prepared to pay. Fund management companies therefore made the assessment that it was not possible to reliably value the fund units, and several Swedish management companies decided to delay the redemption and sale of fund units in a number of their funds for several days in March. This made it even more expensive and difficult for firms to issue bonds.

If it is difficult to sell less liquid assets, like in this case corporate bonds, the funds may need to sell more liquid assets. This means that problems can spread to other financial markets. To protect remaining unit holders, neither is it always desirable to sell liquid assets first and leave the remaining unit holders with assets that might be difficult to sell. There are also general risks associated with funds selling assets in a falling market since more sales put downward pressure on prices and can thus amplify the problems (so-called fire sales).

Discussions are under way in Sweden and internationally about the potential need for more tools to facilitate the fund management companies' liquidity management and reduce contagion risks. At the same time, not all tools are meant to be used for funds traded on a daily basis if the unit holders expect to redeem their units on a daily basis. Adjusted unit share value (so-called swing pricing), which means the fund management company adjusts the price of fund units to allow for the costs and price effects resulting from large in- and outflows in funds, does not resolve the problems that can arise due to uncertain asset valuation. The same applies to so-called gates, i.e. limits on withdrawals. If the valuation is uncertain, it is instead important to promote high transparency, i.e. that the information about the price is made available to create better conditions for well-functioning markets. FI considers it to be very important to increase transparency on the bond markets and intends to further pursue this matter.⁹

⁹ For more information, see FI Supervision 15, *Decreased transparency in bond trading*, October 2019, FI.

13. Dramatic increase between bid and ask price



Source: Refinitiv Eikon.

Note: The diagram shows the difference in per cent between the closing bid and ask price for three-month currency swaps.

DISRUPTIONS IN THE CURRENCY SWAP MARKET

When the coronavirus began to spread, the Swedish market for currency swaps experienced disruptions. In a currency swap, two parties agree to swap currencies with one another and then swap back at a later point in time. Currency swaps are the most common product on the Swedish market for currency derivatives.

The primary counterparties on the market for currency swaps are Swedish banks, large branches, and asset managers. Historically, it has been cheap for banks to issue USD certificates and then enter into an agreement to swap USD for SEK. This is primarily because the secondary market for USD certificates is more liquid than the market for SEK certificates, which means the liquidity premium is lower.

Many Swedish insurance undertakings and other asset managers have large holdings in foreign assets. To reduce or totally eliminate the currency exposure that arises in these holdings, it is common to in full or in part finance them through a currency swap with a bank.

When the supply of USD decreased in the early phase of the coronavirus pandemic, it became more expensive for the banks to fund themselves in USD. As a result, the banks have largely gone over to using other forms of funding. There have therefore been fewer actors who have been willing to be a counterparty to the asset managers. As a consequence of this, the liquidity in the market for currency swaps deteriorated between mid-March and mid-April (Diagram 13).

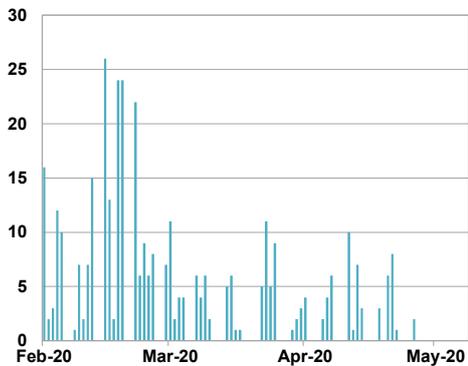
When the market for currency swaps does not function, insurance undertakings and other asset managers may find it difficult to renew their financing through currency derivatives. They may then need to sell assets in USD or exchange SEK for USD to meet the commitments in maturing currency derivatives. Later, this can, in turn, weaken the Swedish krona. These problems have not yet arisen within the Swedish insurance undertakings and occupational pension institutions (see “Stability in the insurance sector”).

FINANCIAL INFRASTRUCTURE HAS WITHSTOOD THE CRISIS SO FAR

A well-functioning financial infrastructure is important for maintaining financial stability.¹⁰ The coronavirus pandemic has introduced both financial and operating risks that the financial infrastructure firms have needed to manage. FI makes the assessment that the Swedish financial infrastructure firms have satisfactorily weathered the crisis so far.

¹⁰Financial infrastructure consists of technical systems that make it possible to pay and exchange securities, register ownership and help market participants manage their risks.

14. Additional collateral has been required to cover risk exposures
Number of margin calls



Source: Nasdaq Clearing.

Note: The diagram shows daily intraday margin calls.

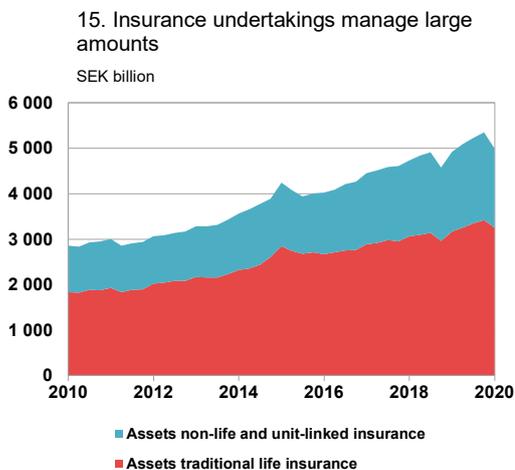
For many of the financial infrastructure firms, the stress that has arisen on the financial markets contributed to higher activity in their systems. For example, trading and settlement volumes have increased.

The risks arising from exposures on the derivative market are concentrated at the central counterparties. This concentration arises since they act as a counterparty to both the seller and the buyer in a financial transaction, which is one way to contribute to stability but also requires the central counterparty to have sufficient financial resources to manage participant defaults. Therefore, the central counterparty must collect collateral from participants. As prices fluctuated dramatically on the financial markets in Q1 2020, there was a need to manage the increased risks. This meant that the participants in the central counterparty submitted additional intraday margin calls during a trading day to cover the risk exposures (Diagram 14). To date, all participants were prepared to submit extra collateral and were able to meet the requirements.

A large part of the operational crisis management at the Swedish financial infrastructure firms has focused on preventing the spread of the coronavirus within the organisations while at the same time ensuring that the firms continued to deliver critical services. This has meant in part that the staff has had the option of working remotely. Working remotely could introduce, for example, higher information security risks and a greater risk of cyber crime. However, FI makes the assessment that the firms are sufficiently prepared to manage these risks.

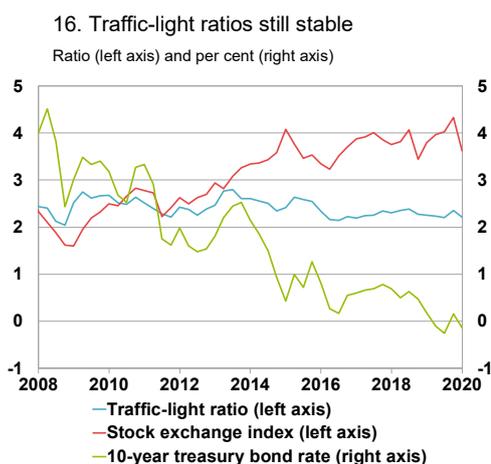
Stability in the insurance sector

The recent dramatic fluctuations on the financial market have had an impact on insurance undertakings and occupational pension institutions. Despite the challenges, FI considers the firms' solvency to currently be good overall. The firms have not needed to make large reallocations within their asset portfolios. They have thus not amplified the price movements to any large extent. In the long term, though, they are still facing the challenge of achieving a return in a persistent low interest rate environment that can carry the costs of future commitments.



Source: Statistics Sweden.

Note: Insurance undertakings' investment assets broken down into traditional life insurance and non-life insurance/unit-linked insurance.



Sources: FI, Nasdaq OMX and Sveriges Riksbank.

Note: Traffic-light ratio for life insurance firms that still use the Solvency I regulations in relation to the growth of a yield index for Swedish shares and the ten-year treasury bond rate.

Insurance undertakings and occupational pension institutions are major investors in the Swedish market, and it is primarily in this respect that they can affect financial stability. If these firms start to sell their assets in a falling market, this could amplify the price movement. At the end of Q1 2020, the insurance sector's total investment assets corresponded to around SEK 5,000 billion, of which, approximately SEK 3,300 billion was in traditionally managed life insurance (Diagram 15).

MARKET FLUCTUATIONS HAVE HAD A LARGE IMPACT

The coronavirus pandemic has had a large impact on the insurance undertakings' and the occupational pension institutions' solvency. In their role as large asset managers, they are greatly affected by events on the financial markets. The crisis thus led initially to a weakened financial position for several firms. Since the beginning of March, FI has been monitoring these firms on a regular basis and intensified its dialogue with them. FI has also encouraged the firms to use the buffers they built up during more favourable conditions to manage the crisis. The aim is to prevent the firms from making large reallocations within their portfolios and thus amplifying price movements on financial markets, so-called procyclical behaviour. As the equity markets in particular have recovered, the firms' solvency has also improved. At the end of the first quarter, the average traffic-light ratio for the largest occupational pension institutions was only marginally lower than at the beginning of the year (Diagram 16).¹¹

OPERATIONAL RISKS UNDER CONTROL

FI is following on a regular basis how the firms are managing the ongoing crisis with the aim of monitoring how their financial position is being affected and following up on issues linked to the pandemic that

¹¹ The traffic-light is a supervisory tool that places the capital buffer held by an insurance undertaking (assets minus liabilities) in relation to an estimated capital requirement based on the insurance undertaking's exposures to various risks. If an undertaking has a capital buffer of SEK 200 million and a capital requirement of SEK 100 million, its traffic-light ratio is 2. The traffic-light is only applied to firms that are not subject to the Solvency II regulatory framework.

affect the firms' business activities. Operationally, the firms' operations have functioned without any major problems. The larger firms quickly began to work either with crisis contingency activities or by activating their crisis management. These firms have focused on ensuring that critical process such as payments, customer service, asset management and IT are functioning even when a large portion of the staff are working remotely. Preparations to manage greater absence due to illness were also made. Basically all of the firms that FI has regular contact with stated that they are conducting stress tests and/or scenario analyses due to the pandemic.

RESILIENCE CONTINUES TO BE SATISFACTORY

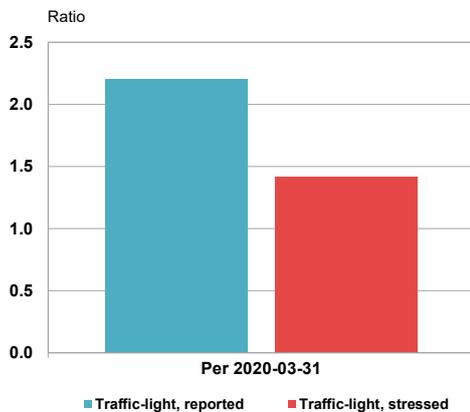
The firms currently have satisfactory resilience in general. The larger traditional life insurance undertakings and occupational pension institutions were initially impacted by the fall in prices on the stock markets but have recovered as the stock markets have strengthened. These firms have buffers today that protect them from, for example, larger falls on the stock markets than what occurred at the beginning of the crisis. Thanks to good resilience at the beginning of the crisis, these firms have also not needed to mitigate risks by significantly reallocating their assets. They thus have been able to avoid amplifying the price movements that occurred on the financial markets during the crisis.

One effect of the crisis is that the currency market, and trading in currency swaps in particular, did not function satisfactorily (see "Stability in the financial markets"). There are Swedish insurance undertakings and occupational pension institutions that use currency swaps to manage the currency risk in their portfolios. Among the firms with which FI has been in contact, the disruptions on the currency market have not been perceived as a major problem since it has been possible to manage the currency risk in the day-to-day management.

Insurance undertakings and occupational pension institutions invest in corporate bonds, which have been significantly impacted by the crisis through falling prices (see "Stability in the financial markets"). The risk of additional price falls can, by extension, have some of an impact on the solvency situation in the insurance sector. However, the holdings in corporate bonds, excluding covered mortgage bonds, amount to less than ten per cent of the sector's total assets. Currently, FI considers the effect on the sector to be small.

To assess the firms' resilience, FI uses stress tests to estimate the effects of immediate market changes on the firms' solvency. In the scenario that is used throughout this report, market prices recover starting in Q2 2020. This means that the firms' solvency continues to improve compared to the end of the first quarter.

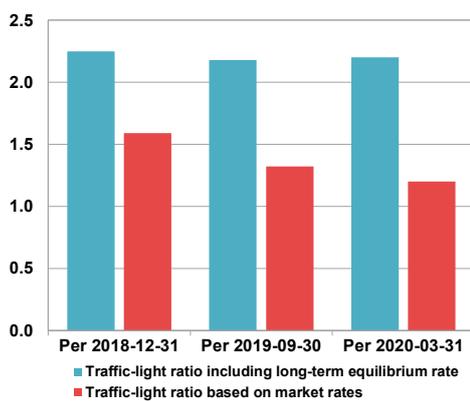
17. Renewed market uncertainty affects solvency



Source: FI.

Note: Weighted traffic-light ratios for a sample of large insurance undertakings. The stressed traffic-light ratios are estimated by FI.

18. Long-term equilibrium rate has major impact



Source: FI.

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

FI also simulated a more negative scenario for the insurance undertakings that assumes renewed uncertainty on the capital markets. The calibration assumes a downturn in share prices corresponding to the range from the highest levels around 19 February to the lowest levels around one month later. We assume that interest rates follow the same trajectory and that credit spreads increase to the highest levels during the period. In addition, we assume that property prices will decrease by 17 per cent.¹² Such a situation would have a significant impact on the traffic-light ratios of the largest insurance undertakings. Even if this means that the undertakings' resilience worsens, all undertakings would still have some buffer left (Diagram 17).

VULNERABILITIES IN SMALLER FIRMS

Even if the resilience of larger insurance undertakings and occupational pension institutions continues to be satisfactory, the crisis has weakened the financial position of some smaller institutions. There may also be life insurance and non-life insurance undertakings that are particularly vulnerable due to the coronavirus pandemic, for example undertakings that underwrite health insurance, income insurance, credit insurance, payment guarantees, travel guarantees, interruption insurance and travel insurance. However, FI currently assesses the effects on the sector even in a very negative scenario to be manageable as a whole, although individual smaller firms may experience difficulties. These firms, though, are not considered to have direct impact on financial stability.

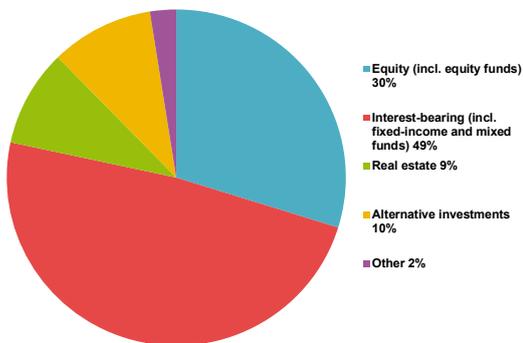
CONTINUED RISK-TAKING IS NECESSARY

Swedish insurance undertakings and occupational pension institutions are very dependent on the future development of the financial markets. The downturn in market rates that had occurred already before the crisis introduced challenges for the sector. This applies primarily to firms with a large portion of savings products with financial guarantees.

Even if the solvency situation currently appears to be good in insurance undertakings and occupational pension institutions, there are limitations in the solvency regulations they apply. The regulations assume a long-term equilibrium rate that is higher than current market rates. This can lead to misleading solvency when interest rates are very low. Under this assumption, the value of the future pension liability is lower than what it would have been if the undertakings used market rates to calculate the value of the liability. For the average duration of the large occupational pension undertakings' commitments of around 18 years, a discount rate of around 0.9 per cent is applied, which can be compared to a market rate of around 0.5 per cent at the end of

¹² In the scenario that is used throughout the report, property prices are assumed to fall by 17 per cent in 2020. Since there is still no data for how property prices have changed during the spring, this assumption is also used here.

19. Distribution of investment assets
Per cent



Source: FI.

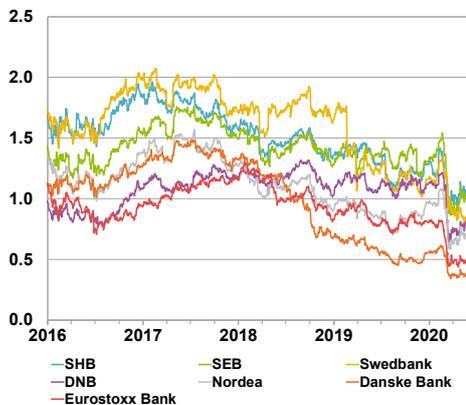
Note: Distribution of investment assets in life insurance undertakings and occupational pension institutes, excluding unit-linked insurance.

March 2020. The higher value of the future pension liability resulting from the application of market rates can be illustrated in estimated traffic-light ratios (Diagram 18). As the diagram shows, the difference between the reported average traffic-light ratio and the estimated ratio according to the market rates increased the past few years due to the increasingly lower long-term interest rates. However, the effect is first realised far into the future due to the long maturity of the pension commitments. Just like in the past few years, this effect can also be offset by the continued good return on assets, but it assumes that firms have the possibility of continuing to invest in other and often riskier assets than interest-bearing securities. Shares will therefore continue to represent a large portion of the portfolios at the same time as the share of properties and alternative assets is expected to continue to increase (Diagram 19). To manage the subsequent risks, firms need to have a strong financial position and sufficient buffers.

Stability in the banking sector

The Swedish banking system entered the current crisis with good profitability and satisfactory capital buffers. FI's analyses of a scenario with a sharp economic downturn indicate that the banks will be able to supply the economy with loans even if significant losses were to arise. However, there is considerable uncertainty surrounding economic development. If the downturn becomes deeper or more protracted than expected, this may cause problems in parts of the banking sector.

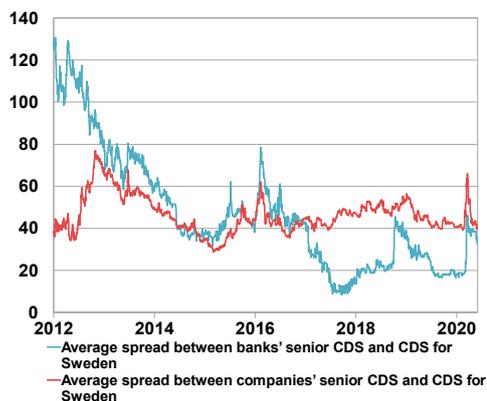
20. Banks' P/B ratios have decreased
P/B ratio



Source: Refinitiv Eikon.

Note: Price/book ratio. Eurostoxx Bank is a market cap weighted average of the constituent banks.

21. Banks' credit spreads have increased
Basis points



Source: Refinitiv Eikon.

Note: Spread senior CDS vs. Sweden CDS. "Banks" is an average of SEB, SHB and Swedbank. "Companies" refers to non-financial corporations.

At the beginning of the current crisis, the Swedish banking system was mainly in a good position. The resilience of the banks was satisfactory due to good profitability and substantial capital and liquidity buffers they had built up since the global financial crisis in 2008–2009. FI currently makes the assessment that the Swedish banking system can handle a sharp economic downturn. However, there is considerable uncertainty, primarily since it is difficult to predict how deep and protracted the crisis will be (see “Scenario analysis of major Swedish banks”).

INVESTORS EXPECT LOWER RETURN FROM THE MAJOR BANKS

The banks' share prices fell sharply at the beginning of the crisis, and as a result the three major Swedish banks' average P/B ratio fell by almost 30 per cent (Diagram 20).¹³ Since then, the P/B ratios have remained low. This change reflects lower expectations on the quality of assets and return on equity. It also reflects the uncertainty about the banks' forecasts and higher investor risk aversion in general.

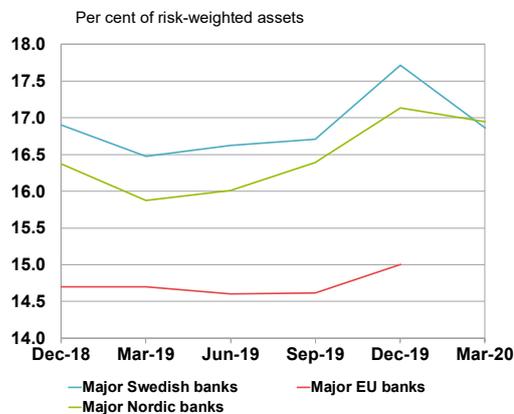
Another indicator of investor confidence in Swedish banks is the credit spreads for the banks' unsecured borrowing. These increased sharply at the beginning of March and remain at levels that are higher than before the crisis (Diagram 21). These spreads also increased for other Swedish firms during the same period (see “Stability in the financial markets”). Support measures from governments and central banks helped stabilise the financial markets, and price movements have decreased since the start of the crisis.

BANKS HAVE SATISFACTORY CAPITAL BUFFERS

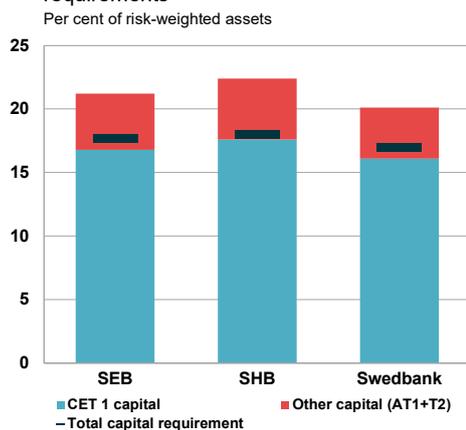
The capital held by the major Swedish banks is satisfactory, with capital ratios comfortably exceeding the capital requirements. During the first quarter, the major Swedish banks' average CET1 capital ratio fell to 16.9 per cent of risk-weighted assets from 17.7 per cent at the start of the year (Diagrams 22 and 23). The decrease is largely the result of changes in the banks' net pension liabilities.

¹³ P/B ratio stands for Price-to-Book, i.e. the share price divided by book value per share.

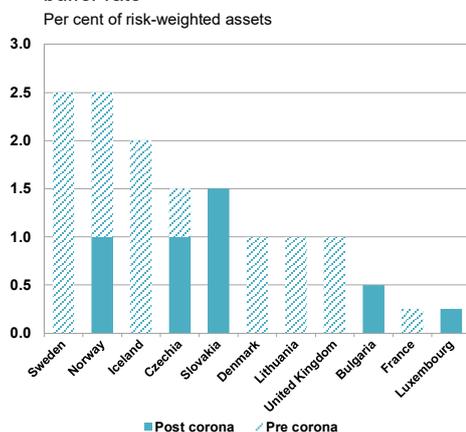
22. Major banks have satisfactory capital levels



23. The major banks meet capital requirements



24. Large decrease of the countercyclical buffer rate



In order for the banks to be able to absorb losses during times of economic or financial shocks and have the ability to continue to lend money to the public during a crisis, it is important that they have sufficient capital buffers. A stable credit supply is particularly important in the current crisis, which is having a major impact on the real economy and where many firms are or will become dependent on receiving or renewing bank loans to survive. It is also in the banks' collective interest to maintain the credit supply in a sustainable manner (see "The pandemic has reverberated around the world").

To make it easier for the banks to continue to supply credit to the economy, FI lowered the countercyclical buffer rate to 0 per cent on 16 March. FI communicated at the same time that a decision to raise the rate would not be made before 16 March 2021.¹⁴ Assuming normal implementation periods, this means that the buffer rate can be expected to remain at 0 per cent until at least 16 March 2022. A decision to raise this rate will only become appropriate when both the economy and the banking system have returned to normal. Future increases to the buffer rate in the future will be made gradually as needed based on the level of systemic risks.¹⁵ The reduction is large in comparison to other European countries, in part because the previous Swedish buffer rate of 2.5 per cent was the highest in the EU (Diagram 24).

The lowering of the countercyclical buffer rate decreased the large and mid-size Swedish banks' capital requirements by a total of SEK 46 billion (for the three major banks the effect was SEK 32 billion). This corresponds to potential new lending in Sweden of SEK 900 billion. FI also urged the banks not to distribute dividends during these highly uncertain times. The three major banks had planned to distribute almost SEK 35 billion, which they have now delayed. However, the capital is still reserved and will not affect own funds until the banks potentially decide to cancel or reduce the dividend for the year. FI expects banks to postpone the distribution of dividends until the scope of any losses is more certain.

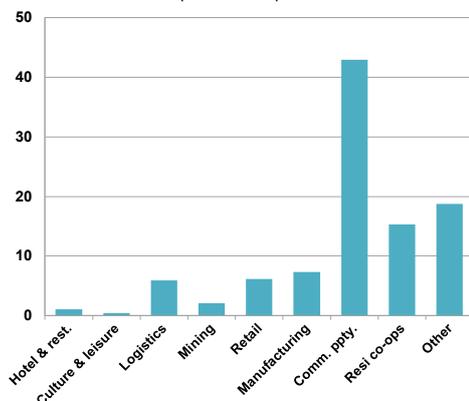
FI conducted a scenario analysis to illustrate how the banks' credit losses and capital situation could be affected by the crisis. The results indicate that, even if the banks were to experience substantial losses, they should be resilient enough to be able to support the economy with the loans that may be needed (see "Scenario analysis of major Swedish banks").

The coronavirus pandemic has so far had a limited impact on the banks' capital adequacy, but there are risks that could reduce the

¹⁴ For more information, see the Decision Memorandum *Amendment to regulations regarding the countercyclical buffer rate*, March 2020, FI.

¹⁵ For more information, see the Decision Memorandum *Countercyclical Buffer Rate*, June 2020, FI. The memorandum is currently only available in Swedish.

25. The major banks have relatively low exposure to vulnerable sectors
Per cent of total exposure to corporates



Source: FI.

Note: Weighted average of the major banks' exposures to non-financial corporations.

banks' capital in the future. Ultimately, the development of the credit quality of issued loans will be crucial for the banks' capital levels and viability in the crisis. So far, the banks have not experienced large credit losses. The extra provisions made by the major banks in Q1 2020 for expected credit losses totalled only SEK 3.5 billion. FI makes the assessment based on its scenario analysis that the credit losses will increase in future quarters, but the scope of the losses is uncertain.

Data from Q4 2019 indicate that the major banks' exposures to particularly vulnerable sectors – hotels and restaurants, culture, entertainment and leisure, mining, and the transport sector – are relatively limited. On average, these groups represent just under 10 per cent of the major banks' lending to corporates (Diagram 25). This corresponds to just over 4 per cent of the major banks' total lending to the public.

At the same time, the economic conditions for affected industries is exceptional, and the exposures to these industries can result in substantial credit losses. This can have a major impact on the banks' own funds, particularly if there are also credit losses in other sectors, such as retail and manufacturing, where the banks have larger exposures. These sectors contain relatively heterogeneous categories of firms, but parts of them have been hit hard by the crisis.

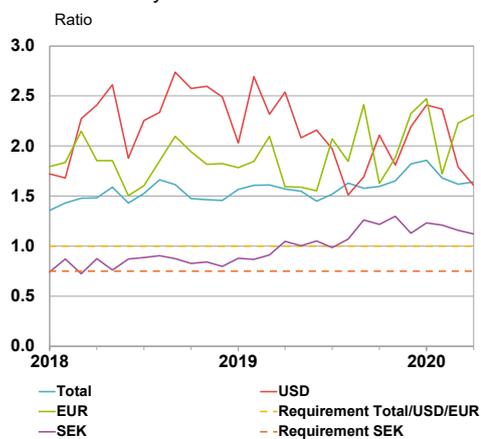
The banks also have large exposures to the commercial real estate sector, which represents around 43 per cent of the banks' total lending to corporates. This sector as a whole has so far not been hit hard by the crisis, but in the long run it may experience problems if many stores, hotels and other firms cannot pay their rent or terminate the rental contract at the same time as the firms' financing costs increase (see "Corporate and household debt").

The possibility of applying for government guarantees for corporate loans (for more information, see Footnote 3) only affects a portion of the banks' lending since the guarantees primarily apply to new lending to small and mid-sized firms in Sweden. This lending represents approximately 16 per cent of all lending to the public in Sweden by the major banks. The guarantee decreases the bank's credit risk for an individual loan guaranteed in this way, but to date the volume of issued guarantees has been limited. Part of the loan's credit risk also remains with the bank since the guarantee only covers up to 70 per cent of the exposure.

THE BANKS HAVE SATISFACTORY LIQUIDITY BUFFERS

The liquidity of the major Swedish banks is satisfactory. All major banks comfortably meet the LCR requirement for both the aggregate of all currencies and the individual currencies EUR, USD and SEK

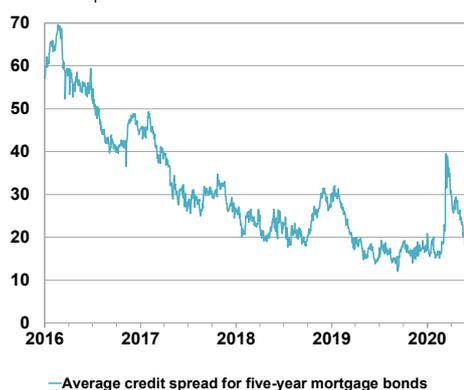
26. LCRs have decreased but are still satisfactory



Source: FI.

Note: Average of SEB, SHB and Swedbank.

27. Higher funding costs for Swedish mortgages



Source: Refinitiv Eikon.

Note: Average credit spread (asset swap spread) for Swedish covered bonds with estimated fixed duration, 5 years effective maturity. Includes SEB, SHB and Swedbank.

(Diagram 26).¹⁶ Due to the crisis, FI also announced that the banks will be allowed to temporarily fall below the requirements if necessary. All major banks have high levels of surplus liquidity, which in other words means they have a large surplus of liquid assets in addition to what is required for meeting requirement levels.

The market for debt instruments with longer maturities is still less liquid than before the crisis, but the major banks have no urgent need to issue bonds in the next few months./// At the beginning of the year, the conditions on the banks' funding markets were favourable. The major Swedish banks took advantage of this to issue large volumes of bonds with long maturities. Thus, the major banks entered the crisis with good funding positions. Significant bond maturities in May and June are largely already financed. However, in the autumn, the major banks will need to issue bonds.

The markets for short-term borrowing, particularly in USD, did not work well at the beginning of the crisis but have become more liquid in the past few weeks following a number of measures from the central banks (see "Stability in the financial markets"). The overall market conditions have improved somewhat the past few weeks with a slight decline in volatility, a slightly lower inter-bank rate, more liquid currency markets, and a more stable stock market. The Swedish market for covered bonds is functioning relatively well, and the spreads have fallen from their peak levels at the start of the crisis (Diagram 27). Swedish spreads have not increased as much as covered bond spreads in many other markets.

BANKS MAINTAIN THE CREDIT SUPPLY

Major banks have not experienced a significant increase in utilised or granted credit facilities the past few weeks. FI makes the assessment that the major banks have enough liquidity to be able to also manage an increase in the withdrawals of credit facilities by firms. FI's scenario analysis also indicates that the capital situation is sufficient for meeting a greater need for loans.

New lending to corporates increased slightly in the second half of March but then returned to the levels noted before the crisis. The conclusion is that the banks have so far maintained the credit supply, and there are no signs of a credit crunch. Financial market statistics from Statistics Sweden show that domestic lending to non-financial firms increased by 5.2 per cent year-on-year in March and 5.8 per cent year-on-year in April.

¹⁶ The requirement for aggregate LCR as well as for LCR in EUR and USD is 100 per cent. FI has also decided that the banks must have a liquidity coverage ratio of at least 75 per cent for all other significant currencies (for example SEK) as of 1 October 2019.

On 17 March, FI announced that a loss of income caused by the coronavirus is considered a valid reason for mortgage customers to qualify for exemption from their amortisation payments (see “Corporate and household debt”).¹⁷ FI estimates that in total the major Swedish banks granted around 111,000 mortgage customers exemption from amortisation payments between 17 March and 22 May. There were fewer applications in terms of both number and loan volume than what the banks had anticipated, and they constitute a very small percentage of the total mortgage stock. The number of applications increased immediately after FI’s announcement about general exemption from the amortisation requirement but then slowed again.

WORKING FROM HOME ENTAILS RISK

The pandemic and its impact have forced the banks to make major operational adjustments. So far they have handled these adjustments well. The banks activated their contingency plans and crisis management groups at the beginning of the crisis. A large percentage of their staff are working remotely, and this is primarily functioning well; there have not been any significant problems. Since working remotely is not as secure from an IT perspective, it is associated with greater operational risks, for example with regard to information security and the risk of cyber crimes. At the same time, the banks see a need to have certain staff on location to ensure continuity in critical functions. More stringent restrictions from governments or greater absences among staff members could make it more difficult to securely conduct operations and maintain critical functions.

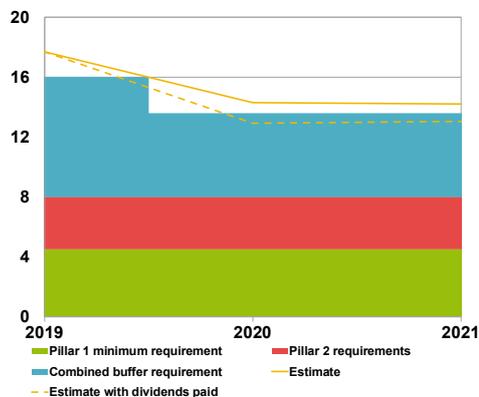
Scenario analysis of major Swedish banks

Economic crises are followed by an increase in credit losses and lower profitability for banks. FI thus conducted a scenario analysis to highlight how the major Swedish banks may be impacted by the ongoing crisis. The results indicate that the banks have sufficient capital buffers to continue to supply credit to the real economy even during the sharp economic downturn we are currently experiencing. However, there is considerable uncertainty about the correlation between the state of the economy and credit losses. Support measures and guarantees that have been taken will dampen credit losses. However, there is still considerable uncertainty about how deep and protracted the economic downturn will be. The banks should therefore postpone the distribution of dividends until the uncertainty surrounding the economic impact of the crisis has subsided.

Being able to take credit risks and bear credit losses are a fundamental part of banks’ operations and therefore are the focus of banking regulations, in particular the design of the capital requirements. Banks report their expected credit losses,

¹⁷ In addition, FI decided in April 2020 that banks should be able to grant all households that request it a temporary exemption from amortisation payments (see Corporate and household debt).

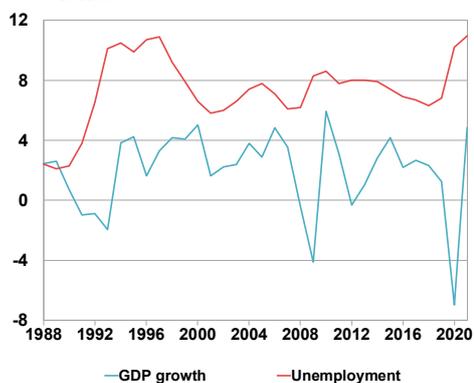
28. Major banks' CET1 capital ratios fall in the scenario but are above the requirements
Percentage of risk-weighted assets



Source: FI.

Note: Refers to the average for the three Swedish major banks (SEB, Swedbank and Handelsbanken) and the CET1 capital ratio in Q4 every year. We use data for Q1 2020, and our estimates begin in Q2 2020. The estimate shows the calculations described in the text where we assume that the banks do not make dividend payments. The lowest point for the capital ratio in our quarterly calculations is 13.5 per cent in Q1 2021. The Pillar II requirement includes systemic risk. The combined buffer requirement in Q4 2020 and 2021 include the capital conservation buffer, the systemic risk buffer, and the countercyclical capital buffer of 0.1 percentage points (based on other EEA countries' countercyclical buffer rates). The total capital requirement combined buffer rate in Q4 2019 also include the countercyclical capital buffer in effect then, before FI lowered it.

29. The scenario consists of a sharp economic downturn
Per cent



Sources: FI and NIER.

Note: GDP is stated to as annual change in per cent. Unemployment is stated as annual average in per cent.

Table 2. Asset prices fall in the scenario
Per cent

	Sweden				Nordic countries		The Baltic region
	GDP	Unemployment	House prices	CRE prices	Share prices	GDP	GDP
2020	-7.0	10.2	-7.9	-17.0	-9.6	-6.3	-8.1
2021	4.8	11.0	-0.2	9.0	11.1	4.0	8.1

Sources: FI, NIER and IMF.

Note: GDP, house prices, commercial property (CRE) prices and share prices are stated as annual change in per cent. Unemployment is stated as annual average in per cent.

so-called provisions, on an ongoing basis. When a bank increases its provisions, the increase is recognized as a cost, which has a negative impact on earnings. If the provisions for credit losses increase sharply, an otherwise profitable bank could report a loss. This reduces the capital the bank has at its disposal. Greater credit risk could also weaken the bank's capital adequacy, where equity is placed in relation to the bank's assets adjusted for estimated risk, so-called risk-weighted assets.

Banks with weaker capital adequacy could reduce their lending. A reduction in the credit supply makes it more difficult for firms to invest and produce and for households to buy homes and other consumption goods. This could worsen an already weak economy and thus worsen the situation for the banks as well. It is therefore important that banks in normal times have sufficient capital buffers to be able to absorb losses and maintain fundamental functions even during a crisis. The banks themselves, their investors, and various authorities all have an interest in regularly following and understanding the banks' financial position and resilience. Scenario analyses of how the banks' financial positions are impacted by macroeconomic variables and asset prices are an important tool for assessing resilience. Scenario analyses where the assumption is made that the economy is exposed to an extreme shock are called stress tests. In Sweden, both FI and the Riksbank conduct these types of analyses of the Swedish banks. The European Banking Authority (EBA) coordinates regular stress tests of banks throughout the EU.

Scenario analyses are a way to show the size of, and the uncertainty surrounding, the banks' future credit losses and capital. Both Sweden and the rest of the world are experiencing a serious economic crisis as a result of the spread of the coronavirus and measures to handle the pandemic. What is happening now is a kind of stress test in real time.

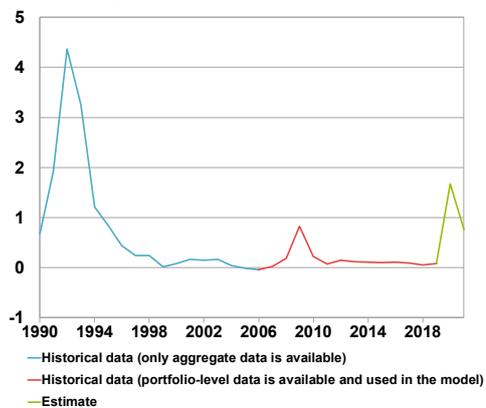
It is not clear how the current crisis will develop and to what extent the crisis will impact borrowers' ability to repay their loans. On the one hand, the drop in demand and production, which has been extreme from a historical perspective, indicates that the credit losses could be large. On the other hand, the Government is providing extensive support that both counteracts unemployment and boosts household income while also making it easier for firms to cover liquidity needs and manage fixed costs. The measures taken to counteract the financial impact of the pandemic improve borrowers' possibilities for meeting their commitments to the banks and thus reduce the risks of large credit losses.

FI's scenario analysis of the capital of the three major Swedish banks¹⁸ illustrates that large credit losses may occur. However, the analysis also shows that, despite these losses, the banks still have substantial resilience (Diagram 28). The banks are cost-efficient and profitable. They are also relatively well capitalised, with larger capital buffers than in previous crises, which means they can absorb significant losses without breaching the minimum requirement in the capital adequacy regulations. An important reason for this is that the regulations have been tightened the past ten years. FI also lowered the countercyclical capital buffer this year, which

18 The term *major banks* refers to SEB, SHB and Swedbank. We use consolidated data and show aggregate results for the banks.

30. Credit losses increase

Percentage of exposures



Sources: FI and Sveriges Riksbank.

Note: Credit losses as a percentage of total lending to the public (firms and households). Historical data shows the average for SEB, Swedbank, Handelsbanken and Nordea, and is based on data gathered by Sveriges Riksbank. Estimate shows the average for the three major Swedish banks (SEB, Swedbank and Handelsbanken). We use data for Q1 2020, and our estimates begin in Q2 2020.

Table 3. Credit loss ratios highest for unsecured loans and loans outside of Sweden
Percentage of exposures

	Sweden	Other Nordic countries	The Baltic region	Other countries	Average
Mortgage	0.8	0.7	1.0	0.8	0.8
Consumer credit	4.5	4.3	5.3	4.8	4.6
CRE	2.7	2.5	3.3	2.7	2.7
SME	4.1	3.9	4.8	3.9	4.1
Other corporate	4.5	4.4	5.5	4.4	4.5
Average	2.0	2.9	3.3	3.3	2.4

Source: FI.

Note: Refers to the average for the three major Swedish banks and total losses in 2020–2021. We use data for Q1 2020, and our estimates begin in Q2 2020. The lending segments are mortgages, consumer credit (other household lending) and the three corporate categories: CRE (loans secured by commercial real estate), SME (unsecured loans to small and mid-sized enterprises) and Other corporate (unsecured loans to primarily large firms). The regions are Sweden, Other Nordic countries (Norway, Denmark, Finland), the Baltic Region (Estonia, Latvia, Lithuania), and Other countries (primarily the UK and Germany).

freed up SEK 32 billion in capital for the three major banks. The banks also decided to postpone their decisions on dividends until the impact of the crisis has become more evident.¹⁹ FI considers this to be a sound decision and expects banks to delay the distribution of dividends until the scope of any losses is less uncertain. This will allow the banks remain resilient and at the same time continue to issue loans to support the economy during the downturn.

About FI's scenario analysis

Over the past few years, FI has developed a method for macroeconomic stress tests that consists of a number of models for different components of the banks' results and balance sheets. Most of the models are based on the historical correlation between macroeconomic data and financial data. However, given that crises do not occur frequently and play out differently, the basis on which to determine the correlation during these periods is limited. It is therefore necessary to make assumptions, the validity of which is difficult to assess. The uncertainty in the models is always significant, since each crisis is more or less unique. The estimates should therefore be viewed as illustrations of plausible courses of events, but not forecasts.

The method can be used to calculate how the banks' capital could develop given a macroeconomic scenario in which GDP falls sharply in 2020. The banks' capital is expressed in terms of the CET1 capital ratio and the leverage ratio. In the macroeconomic scenario, we assume that GDP contracts by 7 per cent for the full year 2020 but that the downturn is greater in the first six months of year (12 per cent).

The economy then recovers, and in 2021 GDP increases by 4.8 per cent (Diagram 29). Unemployment increases to 10.2 per cent in 2020 and rises further to 11.0 per cent in 2021 (for more information, see "Macroeconomic scenario to assess the impact of the crisis"). The assumptions for the other variables are shown in Table 2.

Credit losses have a large impact on the results

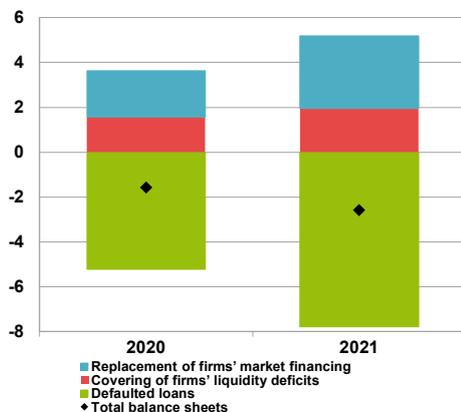
We calculate the size of the credit losses based on econometric models built on the correlation between the major banks' credit losses and macroeconomic variables from 2007 to 2017.²⁰ We calculate losses for various regions and lending segments. To capture that deep crises are often associated with significantly larger losses, we include non-linear effects. This means that credit losses increase more rapidly in a deeper crisis.

¹⁹ One bank has already proposed at its Annual General Meeting to postpone until further notice the distribution of the profit from 2019.

²⁰ An important goal for these estimates has been to be able to analyse in which parts of the banks' portfolios the estimated losses will occur. We have therefore chosen to use disaggregated loss data that is only available for 2007–2017. This means that our estimated correlation is based on the development in a number of countries during the last financial crisis and not on the crisis in the 1990s. We use different macroeconomic variables in different models, for example GDP growth, unemployment and real estate prices. The correlation between macroeconomic development and losses for a certain lending category are the same for all regions. This means, for example, that a change in Swedish GDP affects losses in Swedish mortgages as much as a change in GDP in the Baltics affects losses on Baltic loans. However, since historical credit losses have been systematically higher in some regions, we estimated fixed differences in credit losses between regions.

31. Balance sheets decrease despite increased demand for loans

Change in per cent compared to 2019

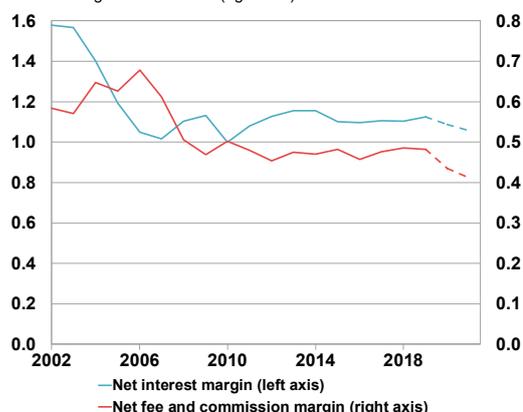


Source: FI.

Note: Refers to the average for the three major Swedish banks. We use data for Q1 2020, and our estimates begin in Q2 2020.

32. Net interest income and net commission income decrease slightly

Percentage of interest-bearing assets (left axis) and percentage of total assets (right axis)



Source: FI.

Note: Refers to the average for the three major Swedish banks. We use data for Q1 2020, and our estimates begin in Q2 2020.

According to our calculations, the scenario can result in credit losses totalling more than SEK 145 billion in 2020 and 2021. This corresponds to 2.4 per cent of the banks' lending (Diagram 30) or roughly estimated twice the pre-tax profit the major banks usually report over a period of two years. We assume that the majority of the credit losses occur in 2020, but losses also occur in 2021.²¹ Significant credit losses occur in all lending segments. Loss ratios (losses in relation to lending), however, are highest for unsecured loans to both households (consumer credit) and firms (Table 3). Expressed as a percentage of the banks' total lending, the credit losses in the scenario analysis are larger than during the financial crisis in 2008-2010 but lower than during the crisis in the 1990s (Diagram 30).

Banks are assumed to increase their lending to support the economy

In an economic crisis, firms and households can have a greater need to borrow in order to be able to produce, invest and consume. At the same time, it is not certain how demand for loans will develop since the crisis is also affecting firms' and households' willingness and ability to take loans. It is important for the banks to have the capacity to meet demand for loans. To highlight this capacity, we assume in the calculations that the firms replace all market financing that matures within one year with bank loans by drawing on existing credit facilities and raising new loans (the blue bars in Diagram 31). We also estimate how much the firms will need to borrow to cover their liquidity deficit (the red bars). We assume that 20 per cent of Swedish firms raise new loans and that these loans fall within the emergency package for firms where the Government guarantees 70 per cent of the credit risk. Our assumptions mean that the major banks' exposures increase by just over SEK 300 billion in 2020 and 2021, but this is offset by the decrease in exposures as loans fall due as a result of credit losses that arise (the green bars).²² Overall, the size of the banks' total balance sheet decreases slightly (the black diamonds in Diagram 31).

Banks' risk-weighted assets increase

Risk-weighted assets are a risk-adjusted measurement of the bank's assets that is used to calculate the capital requirements. Loans to firms and households constitute the majority of the assets, and changes in the credit risk can impact the risk-weighted assets. Even if the banks' risk weights were stable over business cycles, our calculations mean that the credit quality deteriorates to the extent that the risk weights increase. We consider this using a method similar to the one IMF used for its stress tests in 2016.²³ We adjust the risk-weighted assets based on the losses incurred according to our model for credit losses.²⁴ Together with our assumptions

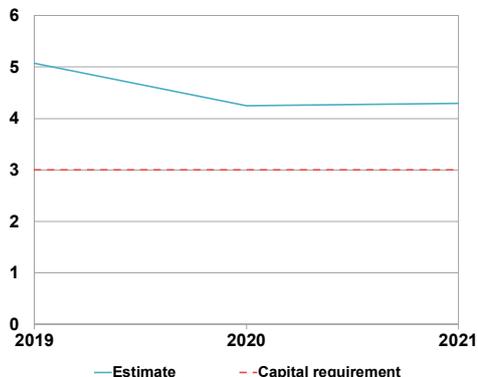
21 The reason we need to distribute the losses over time is that it will take time before the very sudden and deep economic downturn will cause losses, which our module does not consider.

22 We estimate that credit losses correspond to approximately SEK 490 billion in defaulted loans.

23 IMF regularly evaluates the Swedish financial system in its Financial Sector Assessment Program (FSAP). The most recent assessment was conducted in 2016.

24 We assume that the change in credit losses in the scenario is at the portfolio level. We assume that the realised credit losses gradually increase the banks' average expected losses and thus the business cycle-adjusted probability of default (PD) as well as to some extent the loss given default (LGD). We also assume that the European Commission's revised support factor for small and mid-sized firms (SME discount) is implemented in Q2 2020. This means there is a capital reduction factor in the amount of capital that the banks must have for reasons of prudence for the loans they grant small and mid-sized undertaking.

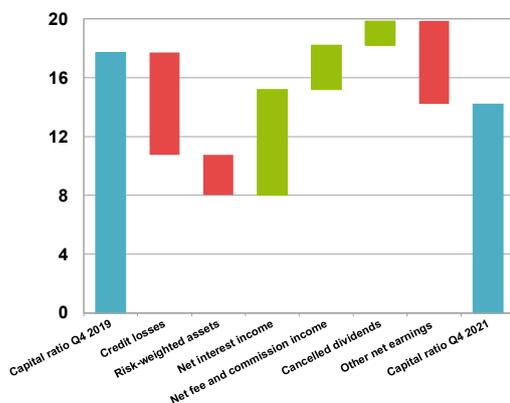
33. Leverage ratio decreases, but is above the pending requirement
Per cent



Source: FI.

Note: Refers to the average for the three major Swedish banks and the leverage ratio in Q4 every year. We use data for Q1 2020, and our estimates begin in Q2 2020. Minimum requirements enter into force on 28 June 2021.

34. The reduction in the capital ratio is primarily due to credit losses but is dampened by earnings
Per cent



Source: FI.

Note: Refers to the average for the three major Swedish banks. Green (red) bars show components that contribute to an increase (decrease) in the capital ratio between Q4 2019 and Q4 2021. We use data for Q1 2020, and our estimates begin in Q2 2020. Other net earnings include primarily costs but also net trading income, revenue from subsidiaries, joint ventures and associated companies. Other Comprehensive Income (which includes changes in net pension assets), and changes in Expected shortfall for credit risk and tax.

regarding lending and defaulted loans, this adjustment means that the risk-weighted assets will increase by 18 per cent between 2019 and 2021.

Earnings contribute to resilience

In addition to credit losses and changes in the risk-weighted assets, the banks' capital is also affected by earnings, primarily net interest income and net commission income. We have also developed models for net interest income and net commission income based on historical correlations with the business cycle and supplemented with a maturity analysis for net interest income.²⁵ In our models, earnings decrease slightly during the scenario (Diagram 32). The fact that the banks are profitable increases their ability to absorb credit losses.

The banks have margins to support the economy

The Swedish banks entered the coronavirus pandemic with substantial capital buffers and good profitability. On 16 March, FI also lowered the countercyclical buffer rate to zero, which freed up capital totalling SEK 32 billion. However, the crisis has resulted in a sharp downturn in the economy. In the scenario analysis, we assume that the planned dividends, which were already reserved in the balance sheet and deducted from own funds, are reinstated as capital in 2020 and that no dividends will be made in 2020 and 2021.

The banks' average CET1 capital ratio decreased in Q1 2020 to 16.9 from 17.7 per cent at the end of 2019. According to the results from our model estimates, the average CET1 capital ratio continues to fall as a result of the crisis to 14.3 per cent at the end of 2020 (Diagram 28). According to the results, the banks' capital ratios would reach a low of 13.5 per cent in 2021 and thereafter increase as the economy recovers, reaching 14.2 per cent at the end of 2021. Even the gross leverage ratio decreases when the capital falls (Diagram 33).

In our calculations, the decrease in the capital ratio is primarily due to the banks' credit losses (Diagram 34), but higher risk-weighted assets also contribute. Overall, the calculations show that even though the banks are subjected to a very negative macrofinancial scenario, as part of which their capital ratio falls, they continue to have the capacity to help the economy by maintaining their lending activities (Diagram 28). The assumption that the banks will not pay any dividends is an important part of this resilience. If the banks were instead to distribute the capital set aside, their capital ratios would continue to fall another 1.4 percentage points to 12.9 per cent at the end of 2020 (Diagram 28). If the macroeconomic situation were to prove to be worse than the scenario, the financial stress on the banks could be greater. But even then, there are still significant buffers that FI can allow the banks to draw on as temporary shock-absorbers, which is fully in line with how the buffers are supposed to work.

25 The model for the net interest income is based on the correlation with GDP, the short-term interest rate for financing in euro (EURIBOR), and the difference between long- and short-term Swedish treasury bond rates (the slope of the return curve). We have combined the outcomes from the model with a calculation based on the banks' maturity gap. This means that we take into account differences in the fixed interest period or maturity between assets and liabilities, including derivatives. In the model for net commission income, GDP growth and the annual change in the stock exchange index are used as explanatory variables.

Table 4. The relationship between GDP and credit loss ratios differs in different crises
Ratio

	Total	Sweden	The Baltic region
1990-93	2.06		
2008-10	0.16	0.04	0.46
2020-2021 estimate	0.20	0.17	0.23

Source: FI.

Note: Ratios between the cumulative loss ratio and the peak-to-trough decrease in GDP with quarterly data. The figure from 1990–1993 for total losses assumes that all losses occurred in Sweden, and only losses up through 1993 are included. The total in 2008–2010 and 2020–2021 includes Sweden and the Baltic region as well as the Nordic countries and other countries.

Considerable uncertainty regarding the results

There is significant uncertainty about our results in addition to the uncertainty that is always associated with economic models, particularly because the models are being applied to circumstances that have never occurred before. This is due in part to the uncertainty about the macroeconomic development going forward but also because the correlation between macroeconomic variables and the banks' credit losses could be different compared to historical data.

A comparison between the Swedish crisis in the 1990s, which coincided with a sharp upswing in real interest rates and a domestic real estate crisis, and the financial crisis in 2008–2009 demonstrates this uncertainty (Table 4). In the crisis in the 1990s, the credit losses were significantly larger in relation to the economic downturn than what was the case in the financial crisis in 2008–2009. This is largely because the banks held very large exposures to highly indebted real estate companies that had serious problems, the crisis was deeper and more drawn out, and the real interest rates rose sharply. During the most recent financial crisis, there were large differences between the major Swedish banks' exposures in different regions. In the Baltics, which experienced a deeper fall in GDP as well as a real estate crisis, the losses were significantly larger in relation to the economic downturn than they were in Sweden, where the crisis primarily manifested itself in lower demand for exports. How economic crises affect banks, in other words, does not depend solely on how deep the economic downturn is. The vulnerability of the financial system and how the economic crisis manifests itself, i.e. which firms and households are affected, how resilient they are, to what extent the banks are exposed to them and the measures taken to mitigate the impact, all play a role. Many of these factors are not fully considered in the calculations presented above.

The crisis we are in is extreme in terms of the fall in GDP, and the economic downturn could be both deeper and more protracted than what the scenario assumes. At the same time, the crisis has met with extensive measures to reduce the negative effects on the economy as well the risks in the financial sector, and the impact on the financial system to date has been limited. If the economy recovers relatively quickly without much financial stress, the banks' losses could be limited and lower than what the model estimates since it has been calibrated to earlier financial crises. Our analyses that are based on microdata of exposures to the commercial real estate sector and household with new mortgages also indicate lower losses (see "Corporate and household debt").

However, if the downturn is more protracted and amplified by higher financing costs, the banks could see large losses, particularly if real estate firms experience problems. To prevent the crisis from becoming deep, economic policy should continue to actively support the economy and the financing options for firms must be reasonable. To safeguard resilience, the banks should hold on to accrued profits. This, together with good profitability and substantial capital buffers, will ensure that the banks have the capacity to keep issuing loans. The banks can thus contribute to mitigating the crisis, which is good for both the banks themselves and the Swedish economy as a whole.

Corporate and household debt

The coronavirus has been a massive challenge for firms in Sweden. In the current situation, FI has primarily focused on the commercial real estate sector among non-financial firms. FI's scenario analysis shows that real estate firms can be hit hard if the economic downturn persists. Mortgage holders are judged to have margins that will allow them to pay their loans even if unemployment rises.

FIRMS IN MANY DIFFERENT INDUSTRIES HAVE BEEN IMPACTED

It is clear that the situation that has arisen due to the measures or changes in behaviour to limit the spread of the coronavirus is having a very negative impact on firms in Sweden. In the initial phase, firms in the restaurant, tourist and recreation industries as well as in retail and capital goods were impacted the most. The manufacturing industry, which is dependent on global logistics chains, has also been heavily impacted (see "The pandemic has reverberated around the world"). For example, in the vehicle industry, factories stood still for a large part of April.

The Government, FI and the Riksbank have taken measures to help banks provide corporate loans (see "The pandemic has reverberated around the world"). FI lowered the countercyclical buffer rate, and the Riksbank initiated a program to finance corporate loans.²⁶ The Government, following a decision by the Riksdag, gave the Swedish National Debt Office an assignment to issue guarantees for corporate loans issued by banks. Some of the other measures the Government has taken to support non-financial firms during this acute crisis include rent subsidies, short-term furloughs, and reorientation support.²⁷

FI has highlighted in earlier analyses that the commercial real estate sector is key from a stability perspective.²⁸ This sector represents only approximately 2 per cent of the employees in non-financial firms, but it is capital-intensive. A large percentage of the banks' lending volume to non-financial firms (around SEK 780 billion) goes to real estate firms.²⁹ In addition, real estate firms have financed themselves on the market through bonds and certificates for more than SEK 500 billion. The commercial real estate sector is therefore closely linked to both the banking system and the rest of the financial system.

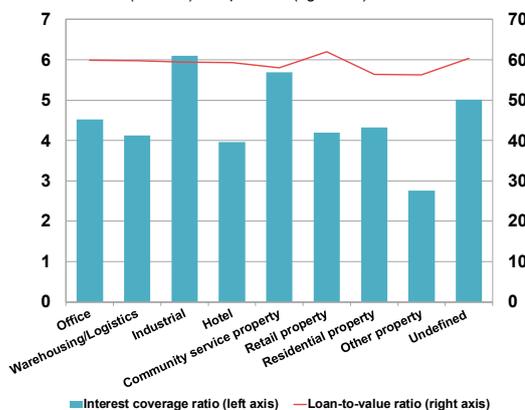
²⁶ FI makes the assessment in its impact analysis that the reduction creates room for the Swedish banks to increase their lending to upwards of SEK 900 billion. The Riksbank's program for corporate loans makes it possible for the banks to lend up to SEK 500 billion.

²⁷ See more about the measures in Footnote 3.

²⁸ For more information, see *Commercial Property Market and Financial Stability*, May 2019, FI.

²⁹ According to the Corporate Lending Survey (FI). Refers to the banks' exposures in Sweden.

35. Interest coverage ratio and loan-to-value ratio based on type of property, median
Ratio (left axis) and per cent (right axis)



Source: FI, corporate lending survey.
Note: Refers to Q3 2018.

CORONA PANDEMIC CAN HIT REAL ESTATE FIRMS HARD

After several years of strong economic growth and low interest rates, real estate firms are able to take on the crisis resulting from the pandemic from a favourable position. Property prices have risen sharply, vacancies have been low, and rent growth has been high. Low interest rates have also led to historically low financing costs. Under these conditions, the real estate firms have had a reassuring interest coverage ratio and a relatively low loan-to-value ratio (Diagram 35).³⁰

The coronavirus pandemic will impact real estate firms if other commercial sectors experience problems. Real estate firms that have a larger share of struggling tenants will be more impacted than others. Since rental income is partly based on turnover, real estate companies that own hotels, for example, will earn lower rental income as households and firms cancel their hotel reservations. Restaurants, cafés and stores are also being hit hard from lower sales. As a result, real estate firms' rental income may decrease, for example if tenants request discounts or deferrals.

To date, office properties have been relatively spared. With a sharp reduction in production of goods and services, though, it is possible that future demand for office space will also fall. In the long run, the economic downturn could also lead to termination of rental contracts in most property segments. Vacancies could thus increase, which would have an impact on the firms' earnings.³¹ The risk of such a negative development can already now impact how attractive commercial properties are as an investment vehicle and make investors less likely to purchase them. This could have a negative impact on property values.

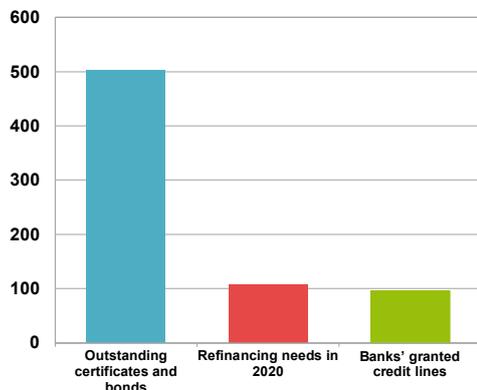
Real estate firms' refinancing risks have increased

The coronavirus pandemic has caused the interest rates on corporate bonds to rise rapidly, and it is difficult for firms to issue new bond loans. This means that some real estate firms may need to borrow from banks to repay maturing market financing. Since these firms have lower earnings and lowered outlooks for the future, the value of properties and the firms' ability to pay borrowing rates are impacted negatively. This could have a negative impact on creditworthiness, which means firms might find it more difficult to refinance their loans and that refinancing could be more expensive than before.

³⁰ The interest coverage ratio is a measure of how well the current net operating income (rental income minus operating costs) covers the firm's interest expenses. If the interest coverage ratio is less than 1, the net operating income does not cover the firm's interest expenses. Given that many real estate firms in Sweden have an interest coverage ratio of more than 4, interest expenses can be comfortably financed by income.

³¹ The underlying demand for residential and community service properties, however, is judged to be much more stable.

36. Outstanding volume of market financing and granted credit lines
SEK billion



Sources: Bloomberg and FI.

Note: "Banks' granted credit lines" refer to the institutions total off-balance exposures to real estate firms. Refers to Danske Bank, Handelsbanken, Nordea, SEB and Swedbank in Q3 2018.

In 2020, approximately SEK 110 billion of the real estate firms' market financing will mature and need to be refinanced (Diagram 36). Approximately SEK 50 billion is in bonds and SEK 60 billion in certificates. In 2021, bonds for approximately an additional SEK 80 billion will mature. Even if some of the borrowing can be refinanced on the market, real estate firms may need to draw on granted credit facilities in banks, which some have already done. Some real estate firms have also applied for new and expanded credit facilities in banks just in case.

More than 60 per cent of the real estate firms' debt consists of bank loans. These loans will mature as well. The listed firms have increased their average maturity in recent years to approximately 3.3 years. FI has no detailed information about the maturity structure for the real estate firms' bank loans, but on average the maturity for all non-financial firms' loans with the major banks is approximately 2–2.5 years. It is estimated that approximately SEK 130–160 billion in bank loans will also need to be refinanced in 2020.³² This means that the real estate firms' total refinancing need in 2020 could total SEK 240–270 billion.

In the short term, refinancing is the largest risk for the commercial real estate firms. At the same time, there is a risk that many firms will have lower credit ratings, which could lead to higher borrowing costs.³³ FI's scenario analysis shows that the real estate firms are vulnerable to higher interest rates (see "Real estate firms are vulnerable to a drawn-out crisis").

Real estate firms are vulnerable to a drawn-out crisis

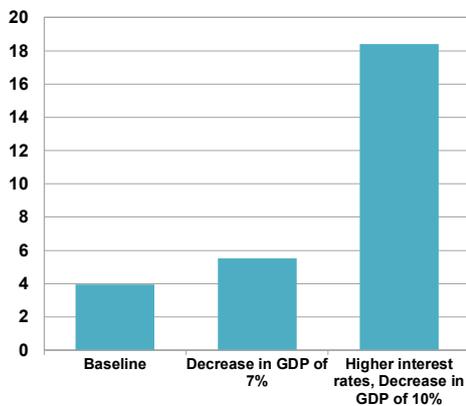
In order to analyse how resilient the Swedish real estate firms³⁴ are, we conducted a scenario analysis that is based on a scenario used throughout this report (see "Macrofinancial scenario to assess the impact of the crisis"). In the analysis, a negative change in the conditions can impact the real estate firms in three ways: 1) greater vacancies or lower rent levels; 2) lower market values; and 3) increased financing costs. The scenario analysis defines a firm as vulnerable when it has an interest coverage ratio of less than 1 and a loan-to-value ratio of more than 70 per cent. The share of debt at firms with these ratios can be viewed as an indicator of elevated credit risk in the commercial real estate sector. The effect on the firms and

³² The calculation is based on approximately 17–21 per cent of the loans maturing in the current year. We assume that the average maturity for commercial real estate firms is around 3–3.5 years.

³³ Since real estate firms have an average maturity of around 3–3.5 years, it will take time before increasing interest expenses have an impact on the firms' average interest rate expenses and thus their direct yield requirements. Higher yield requirements have a negative effect on property values.

³⁴ Swedish banks also have exposures to real estate firms in other countries, particularly the UK and the Baltics. This analysis is limited to the Swedish financial firms.

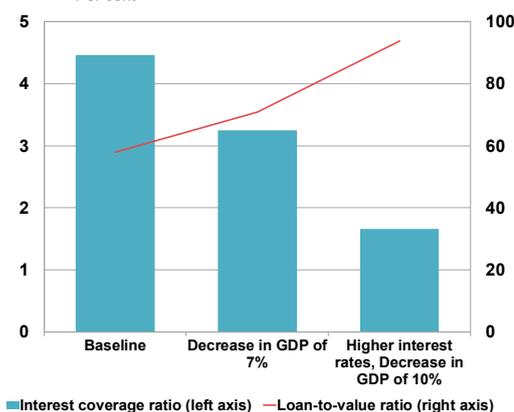
37. Percentage of debt with elevated credit risk
risk
Per cent



Source: FI.

Note: "Percentage of debt with elevated credit risk" refers to debt at firms with an interest coverage ratio below 1 and a loan-to-value ratio above 70 per cent. The debt refers to real estate firms' total debt, i.e. bank loans, market financing and other debt. In the scenario analysis, GDP is assumed to fall by 7 per cent at the same time as firms' financing costs increase by 0.5 percentage points. In a deeper and more drawn-out crisis, GDP decreases by more than 10 per cent and the interest rates the firms must pay are assumed to increase by 3 percentage points. The impact of the interest rate increase is assumed to be 60 per cent. We assume an elasticity of 0.5 between the change in the interest rate and the direct yield requirement for commercial real estate firms and 0.25 for commercial residential property firms and community service property firms. GDP affects the property firms' net operating income. The commercial real estate firms' net operating income decreases by a factor of three compared to GDP, while the net operating income for commercial residential property firms and community service property firms decreases in line with GDP.

38. Loan-to-value ratio and interest coverage ratio, median
Per cent



Source: FI.

subsequently the banks is dependent on how long and deep the crisis is. However, the support measures that have been introduced could reduce the problems for real estate companies' tenants and thus mitigate the effect on the real estate firms.

The scenario analysis indicates that a drop in GDP of 7 per cent in 2020 has a relatively limited effect on the commercial real estate sector. The share of debt with elevated credit risk increases from almost 5 per cent baseline to more than 6 per cent in this scenario (Diagram 37). According to the analysis, earnings fall sharply for specific segments (firms that focus on hotel and retail properties), but as demand increases after the crisis, the situation improves even in these segments.

If the crisis becomes deeper and more drawn out, and the real estate firms' financing costs increase in particular, many real estate firms may find themselves under heavy pressure. FI has assumed here that GDP will fall by just over 10 per cent in 2020 at the same time as there is a credit crunch, which makes it more difficult and expensive for the firms to raise financing. The interest rates the firms must pay are assumed to increase by 3 percentage points.³⁵ Higher financing costs, a clear deterioration in earnings, and falling property values, according to our calculations, could lead to more real estate firms experiencing payment difficulties and defaulting on loans. The analysis indicates that the interest coverage ratio falls sharply and the loan-to-value ratio increases (Diagram 38). Among real estate firms, 29 per cent have an interest coverage ratio of less than 1 and 44 per cent a loan-to-value ratio of more than 100. In this tougher scenario, the share of the real estate firms' debt with elevated credit risk increases to almost 20 per cent.

Payment problems and insolvency among real estate firms can lead to credit losses for banks

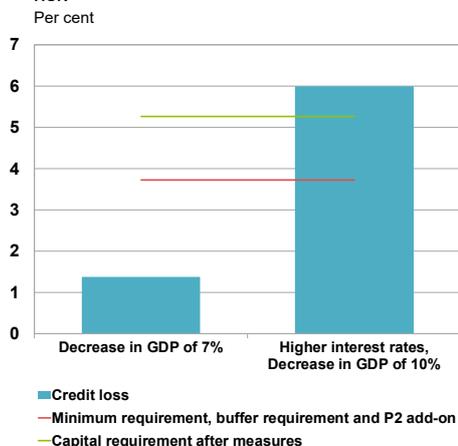
The size of the credit losses in these situations is dependent on how much of a need there is to increase the provisions for anticipated credit losses. The increase is dependent on how the lending portfolio's credit risk is allocated after a stress and the banks' provision rates in each provision step. In the calculations, we assume that debt among counterparties that have an interest coverage ratio less than 1 and a loan-to-value ratio greater than 70 per cent means an elevated credit risk while firms with an interest coverage ratio less than 1 and a loan-to-value ratio greater than 100 per cent can no longer pay their interest expenses and default on their loans.³⁶

In the milder outcome, the banks' credit losses from the exposures to commercial real estate firms are estimated to be 1.4 per cent (Diagram 39). This is a relatively limited effect and is primarily due to the banks having little lending to the real estate firms that are affected the most. In a situation where GDP falls by just over 10 per

³⁵ Interest rates in general are assumed not to change. The impact of the increase in the interest rate is estimated to be approximately 60 per cent.

³⁶ In the calculations, we use the banks' own provision rates as baseline for loans in each category. Since the banks' provision rates will probably be higher following a stress than they are at baseline, this could mean that we underestimate credit losses. At the same time, it is likely that we also overestimate the banks' credit losses since not all firms that following a stress have an interest coverage ratio less than 1 and a loan-to-value ratio of more than 100 per cent will default on their loans.

39. Percentage of debt with elevated credit risk



Source: FI.

Note: "Percentage of debt with elevated credit risk" refers to debt at firms with an interest coverage ratio below 1 and a loan-to-value ratio above 70 per cent. The debt refers to commercial real estate firms' total debt, i.e. bank loans, market financing and other debt.

cent at the same time as the conditions on the credit markets sharply decline, the analysis shows that the real estate firms are hit hard. The banks' credit losses are estimated to amount to 6 per cent, which corresponds to almost SEK 50 billion. These credit losses are significantly larger than the capital the banks are holding to cover the credit risks in lending to commercial real estate in Sweden. The estimated losses are even larger than the capital the banks must hold for real estate exposures after the implementation of FI's policy on raised capital requirements.³⁷

Even though FI makes the assessment that banks may not be holding enough capital for their exposures to the commercial real estate sector during a deeper and more drawn-out crisis, FI considers the banks as a whole to currently hold enough capital, including buffers, to cover large losses from the commercial real estate companies. At the same time, it is not possible to rule out that the credit losses will be large and in a worst-case scenario could threaten financial stability. Possibilities for raising financing, how high interest expenses are and how large vacancies are following company bankruptcies are crucial for how serious the real estate firms' problems could be. To prevent the crisis from becoming deep, economic policy should therefore continue to actively support the economy, and the financing options for firms must be reasonable. It is thus also important for the banks to meet higher demand for loans and not cut-off the credit supply or make their credit terms worse.

FINANCIAL CHALLENGE FOR HOUSEHOLDS

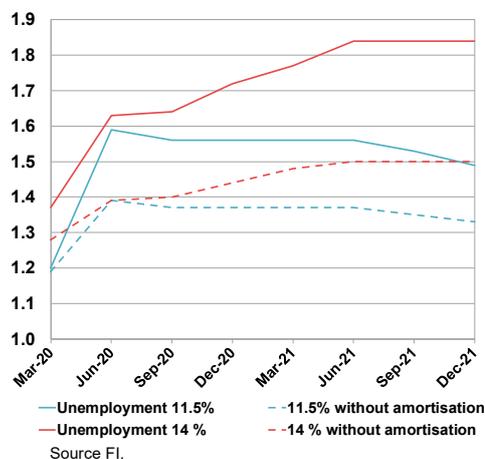
The restrictions enacted to reduce the impact of the coronavirus have resulted in reduced demand within the Swedish economy as well as internationally. This, in turn, has resulted in rising unemployment (see "The pandemic has reverberated around the world"). Weaker outlooks have also made the value of households' assets more uncertain, and households' expectations on house prices have been lowered significantly. This could mean that households will be less optimistic about their financial future. Weaker conditions for households contribute to lower demand in the economy, which in turn can further amplify the economic downturn.

MANY HOUSEHOLDS CAN HANDLE A DEEP ECONOMIC CRISIS

Due to a sound credit assessment, low interest rates and regulatory measures such as the mortgage cap and the amortisation requirements, new mortgagors as a rule have good margins in their finances. A large percentage of mortgagors therefore can make their loan payments even in the presence of severe financial stress. In addition to this, the

³⁷ For more information, see the memorandum *Increased capital requirements on bank loans for commercial real estate*, January 2020. FI. A summary is available in English.

40. Share of mortgagors with deficit between income and expenses
Per cent



Source FI.

Note: Blue line shows the outcome when unemployment reaches 11.5 per cent in mid-2020 and then slowly declines. Red line shows the outcome when unemployment gradually increases and reaches 14 per cent in 2021.

Government's measures in the current situation make things easier for households that are directly impacted by the crisis.³⁸

Based on household data at the individual level, FI analysed how mortgagors can handle rising unemployment.³⁹ The results show that households are resilient to an increase in unemployment. Even if unemployment were to gradually raise to 14 per cent in 2021, a limited share of mortgagors would have a deficit from their income and expenses (Diagram 40). In 2021, the percentage of mortgagors with a deficit in this scenario is expected to be 1.85 per cent. If mortgagors with small margins do not need to amortise, this percentage decreases to 1.5 per cent.

A GENERAL EXEMPTION FROM AMORTISATION REQUIREMENTS IS JUSTIFIED

The amortisation requirements increase households' long-term resilience, so they are better equipped for an economic downturn. When a downturn occurs, this resilience can increase if households decrease savings in the form of amortisation payments and instead save in more liquid forms. This is confirmed by FI's analysis.

In the amortisation requirement, there has always been a possibility for banks to grant exemption from amortisation payment to households that lose their income. In addition, FI decided in April 2020 that banks should be able to grant all households that request one a temporary exemption from amortisation payments. Through these measures, FI is striving to increase households' economic manoeuvrability in order to better adapt to the current circumstances.⁴⁰ Greater economic manoeuvrability for households can also support the macroeconomic development when restrictions due to the coronavirus are lifted.

Banks can grant exemptions for amortisation payments (for both existing and new mortgagors) through August 2021. FI will announce no later than in April 2021 if the exemption needs to be extended based on the conditions and circumstances at that point in time.

³⁸ The Government, for example, has implemented generous furlough subsidies and temporarily changed the rules for unemployment insurance to both include more people and raise the compensation levels.

³⁹ See *The Swedish Mortgage Market 2020*, April 2020, FI, for a more detailed description of the data from the mortgage survey that is used here. We used the mortgage surveys from 2011 to 2019. We revised the loans for data prior to 2019 with agreed amortisation downward and the income upward. We then let the value of the home increase according to the real estate price index. We call this the baseline. The calculation we make assumes that the mortgagor will become unemployed. Their income is reduced to the lowest of SEK 18,500 or 80 per cent of their salary. Implicitly, we have assumed that everyone has unemployment insurance. Individuals in households with two adults have the same probability of becoming unemployed as individuals in single-person households. This means that either one or both persons in households with two adults could become unemployed.

⁴⁰ A more detailed impact analysis of the measures is available in the decision memorandum *General guidelines on exemption from amortisation requirements on special grounds*, April 2020, FI.



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