FINANSINSPEKTIONEN

Stability in the Financial System

28 May 2019

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Foreword

The signals of a slow-down in growth that began to appear already last autumn are still evident. Previously announced increases to the key interest rate have also been placed on hold. There has been a shift in the risk profile: risks associated with higher interest rates have subsided while risks associated with a potential and rapid slow-down in growth have come more into focus.

This also means that the long period of very low interest rates will be prolonged even further. Subsequently, there is a risk that the challenges introduced by the low interest rate environment in terms of high risk-taking and higher asset prices will be amplified. Since FI published its last stability report at the end of November 2018, risk-taking has also increased. We must monitor this carefully.

But there are also some positive developments. The growth in household debt is continuing to slow and house prices are stable. An increased risk awareness among households combined with FI's measures that target households with high debt contributed to these developments. Many households still have high debt, but the development is moving in the right direction.

Even though we have noted that the housing and mortgage markets are calmer, we have also noted a rapid increase in prices and debt in parts of the commercial real estate market. The analyses FI has conducted indicate that the banks need to hold more capital to better reflect the risks associated with lending to commercial properties, even if the banks' capital buffers as a whole are significant.

Despite the challenges stemming from the global political risks, which are difficult to assess, and the prolonged low interest rates, the economic and financial environments are generally stable right now. The satisfactory resilience in general among the Swedish financial firms enhances this assessment.

Stockholm 28 May 2019

Erik Thedéen

Director General

Summary

Both the global and the Swedish economies appear to be slowing down. Low interest rates – which have resulted in high risk-taking and rising asset prices – are expected to remain low for a prolonged period of time. Resilience in the Swedish financial system is satisfactory in general. However, even if the banks' resilience is satisfactory overall, FI makes the assessment that they need more capital to cover the risks in their lending to commercial real estate firms.

The prolonged period of low interest rates has contributed to the economic recovery, but it has also led to increased risk-taking among market participants. This has contributed to the increase in lending among households and firms and the increase in the prices of houses, commercial real estate, shares and other assets. If the willingness to take on risk were to fall sharply, this could cause large price reductions on the markets. Extensive turbulence could, for example, reduce banks' access to market funding or force insurance undertakings to change the composition of their assets. This could ultimately have a negative impact on financial stability in Sweden.

There is still uncertainty surrounding debt-laden countries in the euro zone and the weak banking sector in Europe. Combined with other shocks, for example if the slow-down to the economy were to occur more abruptly than expected, this could lead to greater turbulence on financial markets. Despite this uncertainty, FI considers the financial markets in Sweden to be functioning well right now.

FI makes the assessment that the resilience of the Swedish insurance firms is satisfactory. The greatest vulnerability in the short term is the large shareholdings held by life insurance firms. Although their resilience is satisfactory, they could react procyclically and thus affect other investors. This situation could arise, for example, if they are forced to sell shares during periods of elevated financial uncertainty.

FI makes the assessment that the resilience of the major Swedish banks is satisfactory in general and that their capital and liquidity buffers are sufficient for withstanding a scenario that includes a sharp deterioration in the market conditions. The Swedish banks also have good profitability, which has been amplified by a long period of high economic growth. However, a large portion of their lending is to the commercial real estate sector, a sector that FI considers to be vulnerable. In a scenario with severe financial stress, problems in the commercial real estate sector could cause significant credit losses for the Swedish banks. FI's analysis indicates that the capital held by the banks to cover risks in their lending for commercial real estate is lower than the losses that may occur under stress. Even if the banks' total capital and resilience are satisfactory, FI believes that more capital is needed for the banks' lending to commercial real estate firms.

Threats to financial stability

The global economy has slowed down. The low interest rates, which have contributed to a high level of risk-taking and rising asset prices, are expected to remain low for a prolonged period of time. If the uncertainty surrounding both government finances in the euro zone and the profitability of already weak European banks were to increase, this could have an impact on financial stability in Sweden as well. House prices continue to be stable, but commercial real estate prices are rising rapidly.

Sweden is a small, open economy where economic development is significantly affected by external factors. The financial system in Sweden is also closely interconnected with the global financial markets. This chapter describes some of the shocks that could threaten financial stability in Sweden. Often, FI has no influence over these shocks. FI's work instead aims to ensure that the Swedish financial system is sufficiently resilient in the presence of severe shocks.

SHOCKS THAT COULD AFFECT FINANCIAL STABILITY

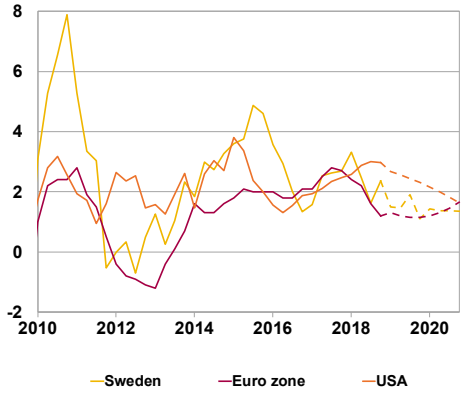
Since the financial crisis, short-term and long-term interest rates have been very low in many developed economies. This has helped the economic recovery, but at the same time it has created an environment of high risk-taking among various market participants. In such an environment, financial vulnerability may have been building in different ways. For example, the debt among households and firms has increased sharply, which could make them more vulnerable to a future crisis (see *Corporate and household debt*). Investors have also sought out riskier assets to get a higher return, which has contributed to the upward pressure on the prices of homes, commercial real estate, shares and other assets.

If investors become less willing to take risks, they may sell riskier assets and seek more secure assets, and if these changes occur quickly and on a large scale, they may lead to sharp falls in price and a lack of liquidity on the markets. This kind of turbulence on the international financial markets could spread to Sweden. It could primarily pose a threat to financial stability in Sweden if it leads to a severe restriction in the banks' access to market funding and forces insurance firms and occupational pension institutions to sell large posts of risky assets. Corporate financing could also be directly impacted via the bond market.

The simultaneous occurrence of a number of shocks could affect financial stability in Sweden. If uncertainty about government finances in the more indebted countries in the euro zone were to increase sharply, and weak European banks were placed under pressure, funding costs for Swedish banks and firms could also increase sharply. Given such a scenario, a sharp slow-down in economic growth and falling assets prices, for example real estate prices, cannot be ruled out. In turn, banks could experience higher credit losses linked to their lending to commercial real estate firms (see *Corporate and household*

1. Signs of economic slow-down

Annual GDP growth, per cent

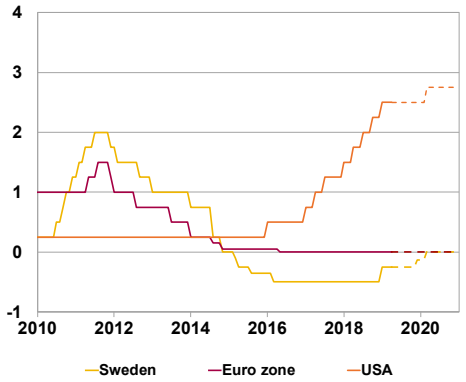


Sources: FI, NIER and Thomson Reuters Datastream.

Note. Seasonally adjusted data.

2. Higher key interest rates may be delayed

Per cent

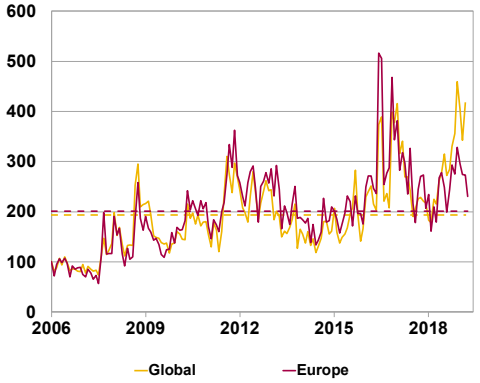


Sources: NIER, Thomson Reuters Datastream and Thomson Reuters Poll.

Note. The refinancing rate is shown for the Euro zone. Dashed lines refer to the forecasts of companies active on the market. The forecasts are based on Thomson Reuters Poll, the median and NIER's forecast for the USA.

3. Elevated political uncertainty

Index, January 2006=100



Source: Economic Policy Uncertainty.

Note. The Economic Policy Uncertainty Index is based on the occurrence of certain expressions in national news articles of various countries linked to economics, policy and uncertainty. The global index includes nineteen countries. The European index includes France, Germany, Italy, Spain and Great Britain. The dashed line refers to the average since 2006.

debt). Rising credit losses could also lead to even higher funding costs for the banks (see *Stability in the banking sector*).

ECONOMIC SLOW-DOWN CONTRIBUTES TO PROLONGED LOW INTEREST RATES

The global economy has been growing at a strong rate for several years at the same time as interest rates have been very low. The situation is now starting to change slightly and transition into an economic slow-down in an environment where key interest rates in the euro zone and Sweden are already low. The signals from the autumn of an economic slow-down are still evident, and the National Institute of Economic Research (NIER) makes the assessment that growth will slow in the coming year in Sweden, the USA and the euro zone (Diagram 1). Plans to tighten the monetary policy have also been delayed. Higher key interest rates thus could be delayed longer than previously expected (Diagram 2). Even market rates are expected to continue to be low for a prolonged period of time (Diagram 12 in *Stability in the financial markets*). There is also a risk that a prolonged period of low interest rates could create incentives for investors to continue to seek out riskier assets in their hunt for yield.

Slower economic growth is not necessarily a threat to financial stability, but rather a natural part of the business cycle. However, significantly slower economic growth could expose vulnerabilities that may have built up in a low interest rate environment. If economic growth also slows more than expected, this could lead investors to reassess their view of risk and make rapid adjustments (see *Stability in the financial markets*).

POLITICAL UNCERTAINTY STILL IN FOCUS

Political uncertainty is elevated both globally and in Europe (Diagram 3). Negotiations in the trade conflict between China and the USA continue. If the parties do not successfully reach an agreement, and the uncertainty of drawn-out tensions between the two countries increases, global growth may slow even more.

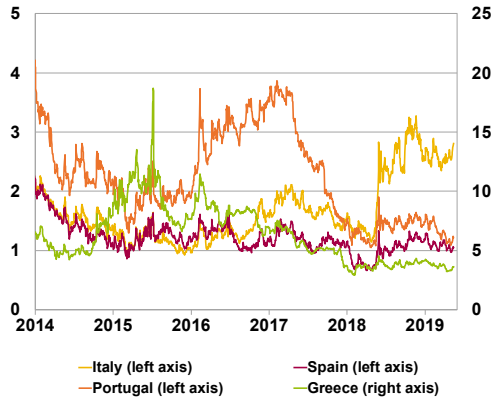
In Europe, uncertainty still hovers around the UK's exit from the EU. FI has previously taken the position that the most important impact of Brexit on the financial system in the short term is that the central counterparty London Clearing House Ltd (LCH) will conduct its business from a third country, which means that clearing conditions will change. A transition solution is now in place.[1] However, it is difficult to know in advance to what extent financial markets will react to a so-called hard Brexit, i.e. the UK leaving the EU without an agreement.

In December 2018, the European Commission and the Italian government reached an agreement regarding the country's budget. However, the uncertainty surrounding Italy's economy remains. Italy has one of the highest levels of sovereign debt in relation to GDP in the euro

1 The European Securities and Markets Authority (ESMA) and the European Commission have approved the temporary continued use of British central counterparties in the event of a hard Brexit. For more information, see the EUR-Lex website: https://eur-lex.europa.eu/eli/dec_impl/2018/2031/oj and https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.095.01.0009.01.ENG

4. Interest rate differential for Italian government bonds still high

Percentage points

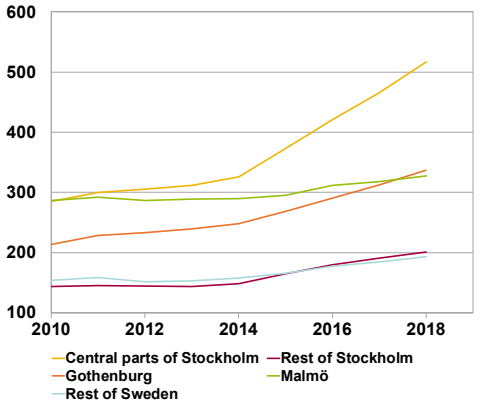


Source: Thomson Reuters Datastream.

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

5. Prices of office buildings rising rapidly

Index, 1983=100

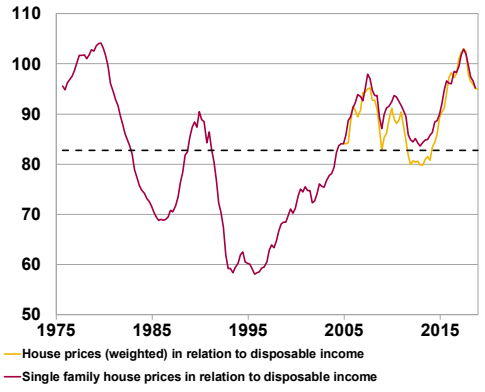


Source: MSCI.

Note. Refers only to office buildings.

6. Prices continue to be high in relation to income

Index, 1980=100



Sources: SCB and Valueguard.

Note. House prices for single-family homes and tenant-owned apartments in all of Sweden and real estate price index for permanent single-family homes. The ratio prices for single-family homes in relation to disposable income has a one-quarter lag due to the delayed release of the statistics.

zone while also being the third largest economy in the region. This uncertainty is visible, for example, in the interest rate differential between Italian and German government bonds. The differential started to rise in May 2018 and is still at an elevated level (Diagram 4).

Closely linked to concerns regarding government finances is the weak European banking sector. Several banks have strengthened their balance sheets in recent years and the number of non-performing loans is decreasing, but a number of weaknesses remain. Profitability continues to be low, and the combination of high sovereign debt and the banks' large holdings of government bonds means that the financial system is vulnerable to political risks. A new phase of slower economic growth would also lead to additional pressure on both the banks' profitability and the countries' budget deficits.

COMMERCIAL REAL ESTATE PRICES INCREASED SHARPLY

Prices for commercial property have risen sharply over the past few years. This applies primarily to office properties in central Stockholm and Gothenburg (Diagram 5). At the same time, the total debt of firms on the commercial real estate market has increased in recent years (see *Corporate and household debt*). One factor that has contributed to the rising real estate prices is the increase in rental income and thereby net operating income[2]. However, real estate prices have increased faster than net operating income. Falling direct yield requirements[3] from investors appear to have also contributed to the increase in prices. If the economic slow-down were to be more severe than expected, falling rental income and a lower willingness among real estate investors to take risk could lead to a fall in real estate prices.[4]

HOUSE PRICES STILL STABLE

House prices have been stable since the beginning of 2018 after rising for many years and falling in the autumn of 2017. There are a number of factors that are indicating continued high demand for housing and high house prices. For example, access to rental residential properties continues to be limited, primarily in regions with high population growth. The average mortgage rate also continues to be very low.

However, there are also factors indicating that house prices could fall further. Prices continue to be high in relation to household income. The ratio between price and income has fallen since the summer of 2017, but it is still 15 per cent higher than the historical average (Diagram 6). The continued large supply of newly built residential properties also slows price growth. The number of new apartments that entered construction peaked in 2017, and these apartments are expected to be completed in 2019. In 2020, the number of completed apartments is expected to be lower, but total supply is dependent on both the supply of new apartments and whether these apartments are sold.

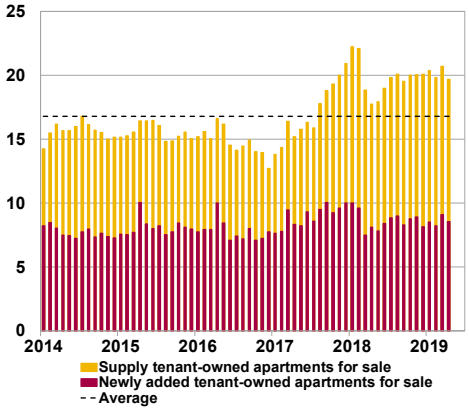
2 A property's net operating income corresponds to rental income less operating and maintenance costs.

3 The direct yield requirement is defined as the risk-free interest rate plus the risk premium that investors demand when investing in commercial real estate.

4 For more information, see the Commercial Real Estate Market and Financial Stability, May 2019, FI.

7. Large supply of tenant-owned apartments for sale

Thousands



Source: Hemnet.

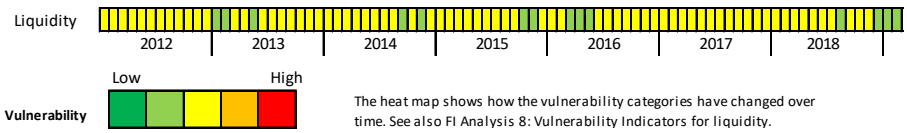
Note. Supply of tenant-owned apartments for sale on Hemnet per month throughout the entire country. Seasonally adjusted data.

It has become harder to sell newly produced apartments, which contributes to the increase in the supply (Diagram 7). House prices are also sensitive to changes in households' economic circumstances and beliefs about the future. If economic growth slows, this could lead to higher unemployment and households may become more cautious in general. This could reduce the demand for housing and press house prices downward. Overall, FI considers the probability of a large fall in house prices to continue to be elevated, even if it has gone down somewhat since the last stability report.

Stability on the financial markets

The financial markets in Sweden are currently functioning well. Share prices have increased since last autumn at the same time as risk premiums on corporate bonds have fallen. This is a sign that investors have increased their risk-taking. There is also some concern among market participants about a pending economic slow-down. If the slow-down were to be more abrupt than expected, this could lead investors to make rapid changes to their portfolios.

Vulnerability indicators for the market sector



The heat map shows how the vulnerability categories have changed over time. See also FI Analysis 8: Vulnerability Indicators for liquidity.

The financial markets are used to allocate risk and capital. In order for these markets to function well and contribute to a stable financial system, it must be possible to maintain their basic functions even during periods of financial stress. FI considers the fixed-income and currency markets to be the most important for financial stability. It is through these markets that financial firms manage both their need for cash to make payments and many of their market risks.

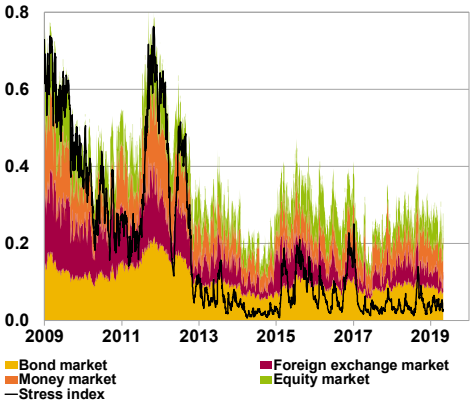
SLIGHT INCREASE IN RISK-TAKING

The Swedish financial markets are currently functioning well, and the stress has returned to low levels since the autumn (Diagram 8). Then, political uncertainty, uncertainty about the economy and a reduced willingness to take on risk were prevalent. However, early in 2019, central banks indicated that they would be raising key interest rates at a slower pace than what had been previously communicated (see Diagram 2 in *Risks in the financial system*). Expectations of low interest rates for a prolonged period moving forward and a greater willingness among investors to take risk have once again increased stock market valuations, measured by P/E ratios, in the USA, Europe and Sweden (Diagram 9). This means that the stock markets in Europe and the USA are now once again valued at slightly higher than their historic average.[5]

The risk premiums on corporate bonds have decreased since last autumn, which also reflects the expectations for the key interest rate and a greater willingness to take risk. Even if the risk premiums have decreased recently, from a more long-term perspective they have increased in Sweden, the euro zone and the USA from the very low levels that prevailed in the beginning of 2018 (Diagram 10).

8. Low financial stress in Sweden

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



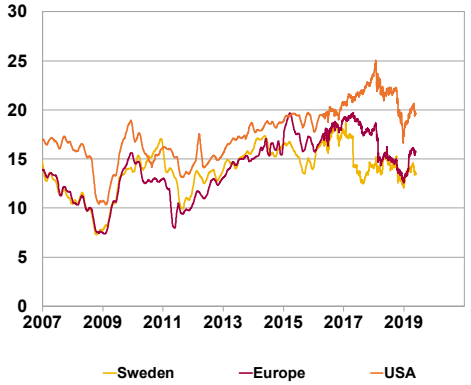
Sources: Bloomberg and Sveriges Riksbank.

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 2019-04-30.

5 A historic average of the P/E ratios from 2004-01-02 to 2019-05-22. The historical average for Sweden is 14.4 per cent, for Europe 14.1 per cent, and for the USA 17.6 per cent. In Sweden, the valuations are somewhat under the historical average.

9. Stock market valuations once again high

P/E ratio

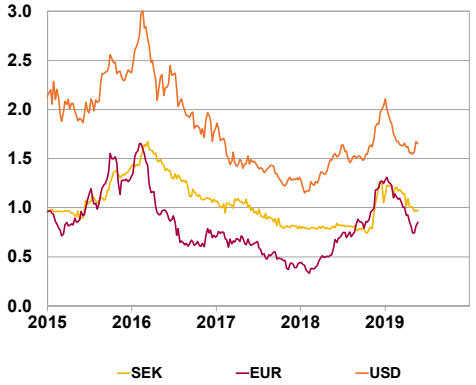


Source: Thomson Reuters Eikon.

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.

10. Risk premiums are lower than in the fall

Percentage points

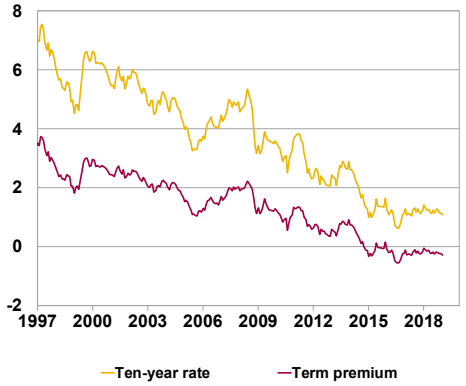


Source: Thomson Reuters Datastream.

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 Thomson Reuters corporate benchmark for Sweden, the Euro zone and the USA and Thomson Reuters's interest rate swaps in each currency. All with a maturity of 5 years.

11. Negative term premium in Sweden

Per cent



Sources: Thomson Reuters Eikon and FI's own calculations.

Note. Monthly swap rates from the Swedish market with maturities between 1 and 10 years, and STIBOR with maturities of 1 month, 3 months and 6 months.

The term premium on Swedish swap rates[6] is currently negative (Diagram 11). A negative term premium can be interpreted as investors being willing to accept a lower expected return in order to protect themselves from, for example, prolonged low inflation or deflation.

Signs of an economic slow-down and cautious announcements from central banks have restrained the expectations on interest rates. Ten-year government bond rates have fallen, and the yield curve has flattened out somewhat (Diagram 12). This is a sign that the market is expecting weaker economic growth and interest rates will remain low for a prolonged period of time.

Risk of a sharp fall in prices continues to be elevated

The recent fluctuations on the financial markets indicate that some investors are sensitive to change and the willingness to take risk can change relatively quickly. Even if the valuations of the stock markets are once again high and risk premiums on corporate bonds have decreased, it is still unclear where the economy is headed. The fact that prices have corrected without causing any major problems is an indication that the financial markets are somewhat resilient to shocks. However, an economic recession and renewed concern surrounding European banks, for example, could lead investors to make rapid adjustments, thus causing a sharp fall in riskier assets (see *Threats to financial stability*). As a whole, FI considers the risk of a sharp fall in prices on the financial markets to be elevated.

REDUCED VULNERABILITIES ON FIXED-INCOME AND FOREIGN EXCHANGE MARKETS

One condition for ensuring that the financial markets function well even under stressed economic conditions is the presence of sufficient market liquidity. This means that it is possible to conduct transactions on the financial markets without a noticeable impact on prices. FI's vulnerability indicators have been showing elevated vulnerability on the fixed-income and foreign exchange markets for a long time. This is an indication that their resilience is low in stressed conditions with low liquidity. The elevated vulnerability has been the result of, for example, high costs for market markers to take on risks and finance their trading books.

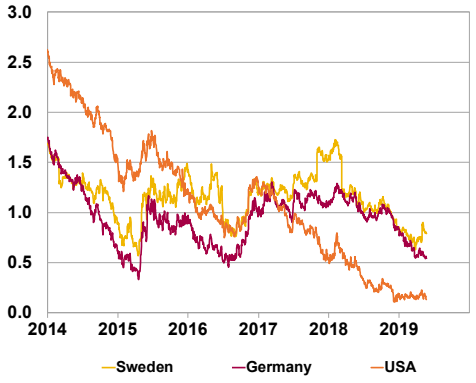
Since FI's last stability report, the vulnerabilities have decreased on the fixed-income and foreign exchange markets. Several indicators have contributed to this decrease. For example, the currency swap market appears to be functioning better.[7] Another area where vulnerability seems to have improved is on the government bond market. Market makers utilised the Swedish National Debt Office's repo facilities less in 2018 than before (Diagram 13). This reduction in the market makers' need to borrow government bonds from the Swedish National Debt Office is primarily due to the increase in activity of foreign investors on the repo market.

6 Both swap rates and government bonds can be used to estimate the term premium. This report uses swap rates due to the greater access to data.

7 For more information, see Stability in the Financial System, November 2018, FI.

12. Interest rates expected to be low in the near future

Percentage points

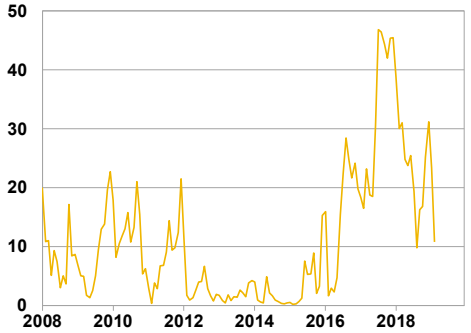


Source: Thomson Reuters Datastream.

Note. The slope of the yield curve, the interest rate differential between ten- and two-year government bonds in each country.

13. Decreased use of the Swedish National Debt Office's facilities

SEK billion



Source: Swedish National Debt Office.

Note. The diagram shows how often the market makers use the Swedish National Debt Office's t/n repo facilities.

As a whole, the indicators show that the vulnerability of liquidity on the fixed-income and foreign exchange markets has decreased since the last stability report.[8]

FOLLOW-UP WORK AFTER THE NASDAQ CLEARING INCIDENT CONTINUES

In September 2018, a serious incident occurred at the central counterparty Nasdaq Clearing AB (Nasdaq Clearing). A clearing member was declared in default since the member was not able to meet a margin call.[9] FI considers the incident to be very serious, and it has also attracted considerable international interest from other authorities and organisations.

FI is continuing to analyse the incident and has published, for example, a discussion paper on the auction procedures within the framework of central counterparties' default management procedures.[10] In addition to methods for managing default situations, FI is focusing on risk management and member criteria. Nasdaq Clearing also drew up an action plan that contained a number of measures the firm intends to take.

Negotiations are under way within the EU regarding a proposal for a European framework for recovery and resolution of central counterparties that has some similarities to the framework in place for systemically important banks. FI is following these negotiations closely and continuing to push for an agreement to ensure that the financial markets function well even if a central counterparty suffers severe financial problems.

8 For more information, see FI Analysis 8, Vulnerability Indicators for Liquidity, 2017, FI.

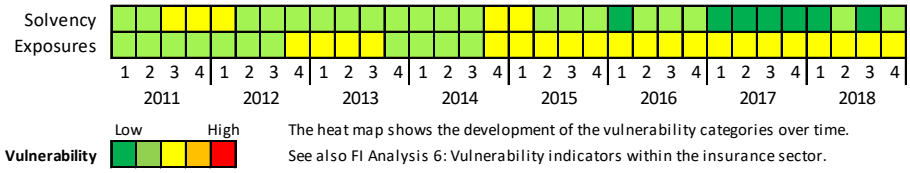
9 For more information, see Stability in the Financial System, November 2018, FI.

10 For more information, see Discussion paper on CCP default management auctions, 2019-01-09, FI.

Stability in the insurance sector

The financial position of Swedish life insurance firms continues to be strong. The greatest vulnerability in the short term is the large posts of shareholdings held by life insurance firms. In the long term, the challenge of prolonged low interest rates remains. Although the firms have the potential to handle both of these vulnerabilities, their behaviour could transmit contagion effects to the rest of the financial sector.

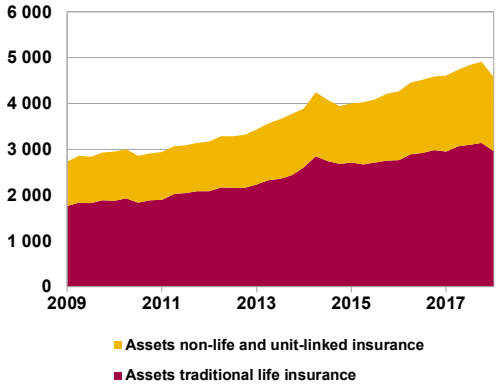
Vulnerability indicators for the insurance sector



The heat map shows the development of the vulnerability categories over time.
See also FI Analysis 6: Vulnerability indicators within the insurance sector.

14. Insurance undertakings manage large amounts

SEK billion

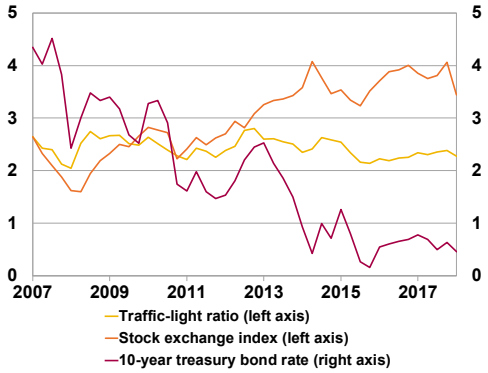


Source: Statistics Sweden.

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

15. Financial position still stable

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



Sources: FI and Thomson Reuters Eikon.

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

Swedish insurance firms and occupational pension institutions fulfil an important function in the financial system. These firms manage very large sums of money and are among the largest actors on the capital markets. At the end of 2018, insurance firms' total investment assets corresponded to around SEK 4,600 billion, of which approximately SEK 3,000 billion was in traditional managed life insurance (Diagram 14).

Life insurance firms with traditional management hold large posts of assets that do not match the firms' long-term pension commitments. As a result, the firms become sensitive to market risks. If a firm's financial position declines, for example due to a sharp fall in share prices, the firm may need to sell riskier assets to reduce its market exposure. If several firms simultaneously apply this same strategy, this could amplify the market fluctuations and deepen a financial crisis through what is called procyclical behaviour.

CONTINUED GOOD RESILIENCE

Swedish insurance firms have demonstrated a stable financial position for a long time (Diagram 15). Within non-life insurance, this is a result of a long period of very good financial results from insurance activities. For life insurance firms, the stable financial position is because of the strong returns from capital management, primarily due to rising share prices.

During Q4 2018, the financial markets experienced falling share prices, rising risk premiums on corporate bonds and a flatter swap rate curve. This development weakened solvency somewhat from the end of the third quarter through the start of the new year. This was captured by FI's vulnerability indicators for solvency, which were slightly weaker in Q4 primarily due to falling share prices.

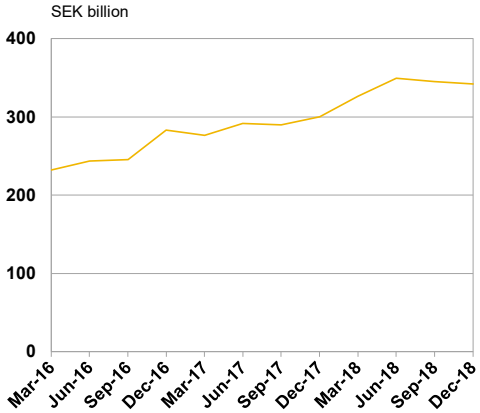
The developments in Q1 2019, more specifically the recovery in share prices and falling risk premiums on corporate bonds, have been more favourable for insurance firms' solvency. An offsetting effect is that the swap rate curve has become flatter since the start of the new year,

which has increased the value of the firms' insurance commitments. FI makes the assessment that the market development in Q1 2019 has lifted the solvency of insurance firms to approximately the same levels as at the end of Q3 2019.

ALTERNATIVE ASSETS COULD INCREASE LIQUIDITY RISKS

In previous stability reports, FI has noted an increase in insurance firms' holdings of alternative assets (Diagram 16).[11] Due to low interest rates, the firms have invested in riskier assets in order to increase their return (see *Threats to financial stability*). There are also other reasons to invest in these assets, since they can provide greater diversification and improve maturity matching between assets and liabilities.

16. Increased holdings of alternative assets



Source: FI.

Note. Alternative assets according to FI's classification.

There is a significant spread in both the size and the nature of the various insurance firms' investments in alternative assets. However, the volumes are not large enough to bring FI to the conclusion that the risk of a fall in the prices of these assets constitutes a major risk for the financial position of individual insurance firms. On the other hand, it is likely that firms with investments in illiquid assets will find it difficult to liquidate these assets during periods of financial uncertainty. A higher percentage of alternative assets thus increases the risk that insurance firms will sell off more liquid assets, for example shares, and thus react in a procyclical manner during periods of high financial uncertainty. It is therefore important for insurance firms that have invested in more illiquid assets to have a financial position that is strong enough to manage the risks associated with these investments.

MODEL ASSUMPTIONS CAN WEAKEN SOLVENCY IN THE LONG RUN

The calculation of the value of insurance firms' commitments is based on the present value of expected future cash flows. The present value calculation uses a model assumption that the interest rate will move toward equilibrium over time, the Ultimate Forward Rate (UFR). This equilibrium rate is starting to be phased in for longer maturities where interest rate swaps are not considered to be sufficiently liquid for use in the present value calculation.

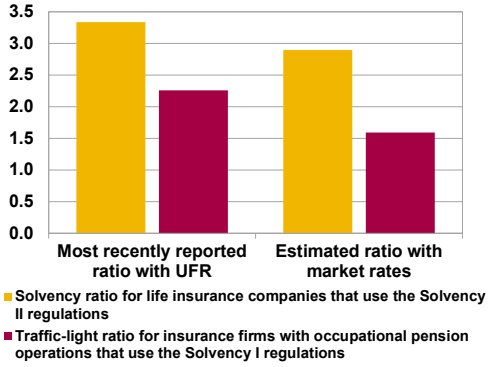
Life insurance firms and occupational pension institutions conduct their business with assumptions that stretch far into the future. The objective of the long-term equilibrium rate is to reduce firms' sensitivity to short-term fluctuations in long-term interest rates when valuing their insurance commitments. This interest rate allows the firms to apply a more long-term investment strategy and make them less likely to act procyclically in the short term. The model also introduces a risk that not enough capital is being set off for insurance commitments if the assumed long-term equilibrium rate is higher than the actual market rates for a long period of time.

Over the past few years, FI has conducted several investigations into and in-depth analyses of the firms' resilience to prolonged low interest

11 The assets FI calls alternative assets here normally are not listed, are less liquid and are often valued using modelled assumptions, which reduces transparency.

17. UFR has major impact

Ratio

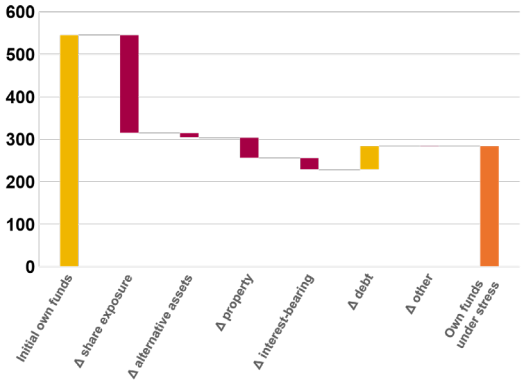


Source: FI.

Note. Ratios based on market rates (excluding the UFR assumption) are estimates by FI.

18. Falling share prices greatest impact on own funds

SEK billion

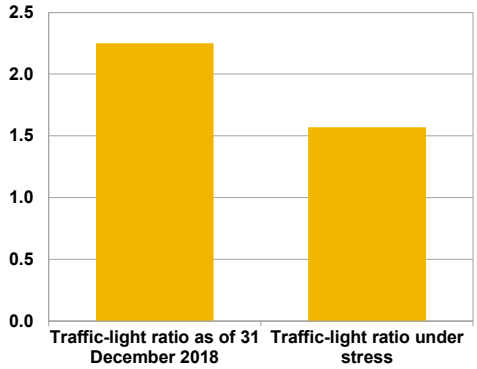


Source: FI.

Note. Estimated change in own funds after stress divided into various factors for a sample of large insurance undertakings.

19. Large impact on traffic-light ratios

Ratio



Source: FI.

Note. Weighted traffic-light ratio as at 31 December 2018 for a sample of large insurance undertakings (same sample as in diagram 18). The stressed traffic-light ratio is estimated by FI.

rates and a lower long-term equilibrium rate. On this basis, FI has determined that the insurance firms are able to withstand low interest rates and that their resilience to such a scenario has increased in recent years. At the same time, FI is seeing significant vulnerability when prolonged low interest rates are combined with a major fall in share prices.

Recent developments indicate a greater expectation that interest rates will remain low for a long period of time (see *Threats to financial stability* and *Stability in the financial markets*). It is thus probable that the risks associated with this model assumption will remain and will continue to be an important topic in supervision. FI therefore also estimates the firms' financial positions based on a curve built solely from market rates, i.e. without the assumption of the long-term equilibrium rate. Current estimates show that the model assumption of a long-term equilibrium rate has a significant impact on insurance firms' financial position (Diagram 17). However, the negative effect of prolonged low interest rates, illustrated as the difference between the most recently reported ratios using UFR and a ratio using estimated market rates in the diagram, has a gradual impact and is evident far in the future as the commitments mature. It is thus not comparable with, for example, the immediate effects that are simulated in stress tests and other sensitivity analyses.

FALL IN SHARE PRICES HAS GREATEST IMPACT ON OWN FUNDS

Based on the market scenario included in the stress test conducted by the European Insurance and Occupational Pension Authority (EIOPA) of the European occupational pension sector in 2019, FI has estimated the resilience of Swedish insurance firms.[12] The scenario is based on a sudden revaluation of risk premiums, which leads to a widespread fall in the prices of assets.

According to FI's calculations, it is primarily the fall in share prices that affects the own funds, and then primarily in the largest insurance firms (Diagram 18).[13] The increase in risk premiums on interest-bearing securities that are included in the scenario probably does not have as much of an effect on Swedish insurance firms as it would have had on many European insurance firms. This is largely because the Swedish firms have smaller holdings of interest-bearing assets and have invested these assets in securities with relatively short maturities and good credit quality.

In general, the scenario has a greater impact on large insurance firms, which often have greater exposure to shares. Even though the outcome across firms varies, the results show that the firms in general meet the capital requirements by a good margin even after the scenario (Diagram 19). However, there is still a risk that the insurance firms could

12 In brief, the scenario contains sharply falling asset prices, increased risk premiums on bonds and slightly rising interest rates. The fall in share prices lies between 36 and 43 per cent. Commercial real estate prices fall by 35 per cent. For full specifications, go to EIOPA's website: https://eiopa.europa.eu/Pages/Financial-stability-and-crisis-prevention/Occupational-Pensions-StressTest-2019.aspx.

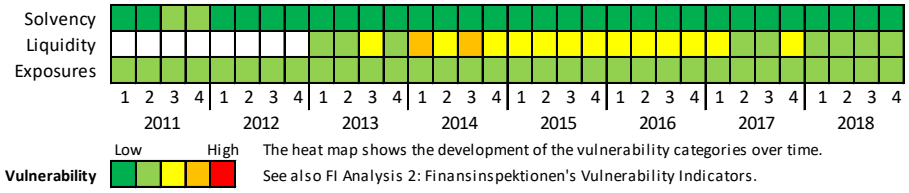
13 FI has relied on reported data and has not requested additional data from the firms. FI has also applied a number of assumptions, so the outcome should therefore be viewed as an approximation.

contribute to even more downward pressure on prices if they choose to sell riskier assets. Therefore, their behaviour could have a negative impact on the rest of the financial sector and financial stability.

Stability in the banking sector

FI makes the assessment that the resilience of the three major Swedish banks is satisfactory. This assessment is due in part to their significant capital and liquidity buffers, but also because they have good profitability. However, problems on the commercial real estate market could result in credit losses for the banks. The three major banks hold large exposures to the commercial real estate sector. FI's overall assessment is that the banks need to hold more capital to cover their risks in lending to this sector.

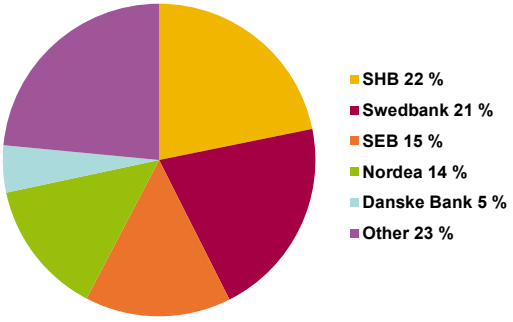
Vulnerability indicators for the banking sector



The heat map shows the development of the vulnerability categories over time.
See also FI Analysis 2: Finansinspektionen's Vulnerability Indicators.

20. Distribution of bank lending in Sweden

Per cent

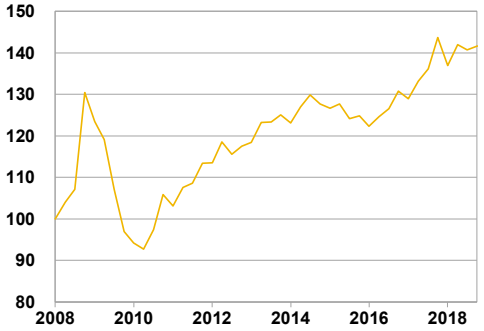


Source: FI.

Note. Data for Q4 2018. Banks' lending to the general public. "Other" includes lending in Sweden from other Swedish credit institutions and foreign banks.

21. Earnings of the major banks are high

Index, Q1 2008 = 100



Source: Bloomberg.

Note. Major banks' net interest income indexed. Refers to SEB, SHB and Swedbank.

Banks play a central role in the financial system in that they contribute fundamental functions such as payments, the conversion of savings into financing and the management of financial risks. These functions are critical for the financial system and the economy as a whole. It is therefore important for the banking system to have a satisfactory level of resilience to shocks and the confidence of investors and customers.

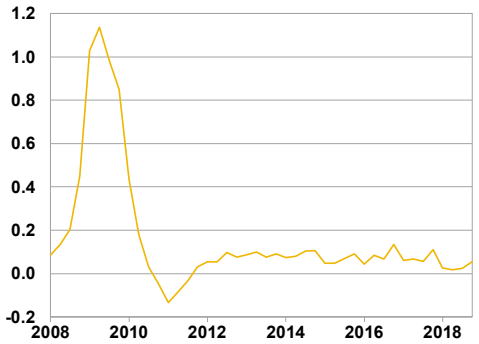
The requirements that FI imposes on banks aim to ensure that their resilience is sufficient and maintain a high degree of confidence in the Swedish banking system. However, banks also need to protect their reputation themselves through sound risk management and good governance and control of their operations. This resilience is strengthened by sustainable business models with stable profitability, sufficiently large capital buffers, and confidence in the financing market. A satisfactory level of resilience also reduces the risk that problems will spread to other parts of the financial system.

There are currently around 120 banks, credit market companies and other credit institutions that conduct business in Sweden with authorisation from FI. Five of them – the three major Swedish banks Handelsbanken (SHB), SEB and Swedbank and the Swedish operations of the two foreign banks Nordea and Danske Bank – are responsible for a large portion of the banking operations in Sweden.[14] Together, these banks represent approximately 77 per cent of the banking system's total lending to the public in Sweden (Diagram 20). Due to their size and interconnectedness with the rest of the financial system, these banks play a key role in how well the Swedish banking system functions. The fact that the banking system is concentrated to such a small number of large banks can make it more vulnerable, since difficulties in one major bank can lead to problems in the financial system as a

14 Nordea and Danske Bank conduct their business in Sweden in part through their Swedish branches but also through their respective Swedish mortgage company.

22. Major banks continue to have low credit losses

Per cent

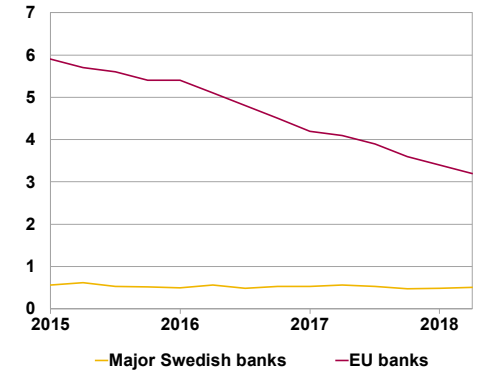


Source: The banks' interim reports.

Note. Loan losses of major banks as a percentage of total lending to the private and public sectors on a quarterly basis, at an annual rate. The low levels in 2011 are partly due to recovered provisions from previous years. Refers to SEB, SHB and Swedbank.

23. Low percentage of non-performing loans in Sweden

Per cent

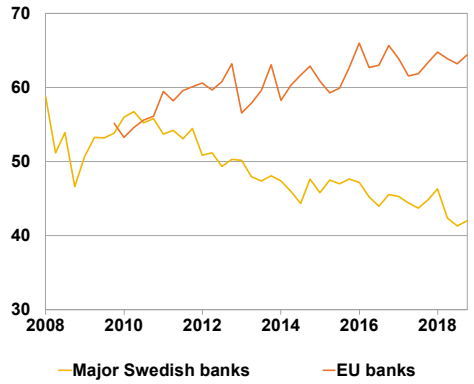


Sources: EBA and SNL.

Note. Non-performing loans in relation to total lending. Average of the three major Swedish banks and the banking sector in the EU.

24. Major Swedish banks have lower costs

Per cent



Sources: EBA and SNL.

Note. Major banks' C/I ratio, that is, costs in relation to income, compared to an average for EU banks. Refers to SEB, SHB and Swedbank.

whole. FI therefore prioritises supervision of the major banks and places higher demands on their capital.

GOOD PROFITABILITY

The net interest income of the three major banks is the largest contributor to their earnings. This income has increased over a long period of time and is currently high (Diagram 21). Net commission income has also increased. Total earnings have benefited from a high lending rate, strong interest rate margins and rapid growth on the financial markets over a long period of time. The high earnings of the three major banks improves their ability to withstand future challenges.

The favourable economic conditions have also contributed to the three major banks' low credit losses (Diagram 22) and low non-performing loans (Diagram 23).[15] However, there are signs that economic growth is starting to slow (see *Threats to financial stability*). A weaker economy could have a negative impact on the banks' profitability through both lower earnings and an increase in credit losses. Parts of the banks' traditional operations are being challenged as a result of, for example, technological developments. This increases the competition for Swedish banks.

In addition to high earnings and low loss levels, the major Swedish banks also have lower costs in relation to revenue compared to the average for the major banks in the EU (Diagram 24). Overall, the three major banks currently have a stronger financial position and a higher return on equity than the average in the EU. Due to their high returns, the vulnerability indicator for solvency has been showing low vulnerability for a long time.

MAJOR SWEDISH BANKS HAVE SIGNIFICANT CAPITAL BUFFERS

The banks' capital levels, and thus the banking system's resilience, are greatly affected by FI's capital requirements. For FI, it is important for the requirements to include large buffers, which during times of crisis allow the banks to absorb losses without being in violation of the requirements.[16] The three major Swedish banks have large capital buffers compared to other European banks. This is in part due to FI having introduced higher buffer requirements than required by the regulatory framework, but also because the major banks want to have their own margin to the requirements set by FI.

One of the buffer requirements is the countercyclical capital buffer. Because the economy has had expansive financial conditions for a long time, including low interest rates, rising asset prices and high credit growth, FI makes the assessment that the systemic risks in the Swedish financial system are elevated. FI therefore raised the countercyclical capital buffer rate from 2.0 to 2.5 per cent in September 2018. The higher buffer rate will be applied as of 19 September 2019.[17]

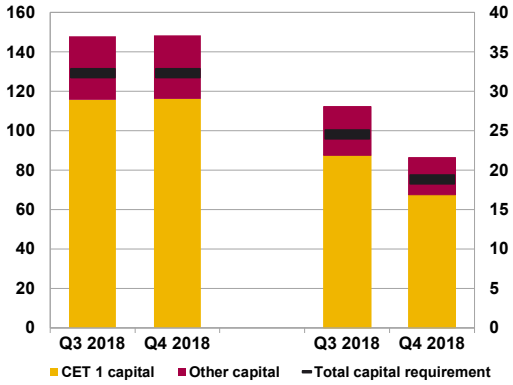
15 A loan is non-performing when the borrowers has not made the agreed interest rate and amortisation payments within a certain period of time after the due date (normally 90 days).

16 For more information about FI's view on capital requirements, see Stability in the Financial System, November 2018, FI.

17 For more information, see the Decision Memorandum Amendment to regulations regarding the countercyclical buffer rate, September 2018, FI.

25. Major banks meet capital requirements.

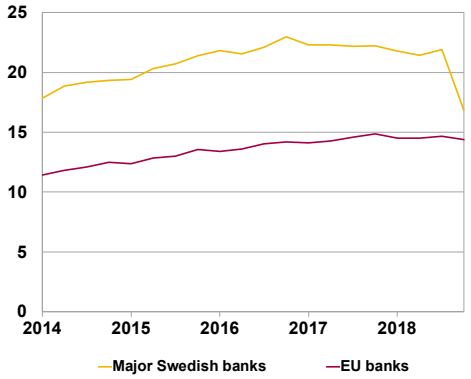
SEK billion (left axis) and percentage of risk-weighted assets (right axis)



Source: FI.
Note. Refers to SEB, SHB and Swedbank.

26. Lower CET 1 ratio but good buffer to the capital requirements.

Percentage of risk-weighted assets

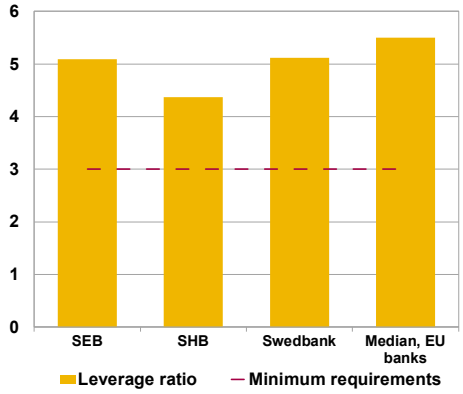


Sources: EBA and FI.

Note. The major banks' average CET1 ratio compared to the EU banks' average ratio. Refers to SEB, SHB and Swedbank.

27. Major banks meet the leverage ratio requirement.

Per cent



Sources: EBA and FI.

Note. Data from 2018.

The capital levels of the three major banks have increased slowly since 2014 (Diagram 26), and they fulfil the risk-based capital requirements by a comfortable margin (Diagram 25). The capital requirement expressed in SEK for the three major Swedish banks did not change in Q4 2018, but in relation to the risk-weighted assets, the requirement decreased from 24.6 to 18.8 per cent between Q3 and Q4. This is primarily because FI changed the method it uses to apply the risk-weight floor to Swedish mortgages. The amendment went into effect on 31 December 2018.[18] Another explanation is that risks which previously were managed under Pillar 2 are now being considered in the banks' models, resulting in an increase to the risk-weighted assets. Overall, these changes mean that the banks' capital and capital requirements will be lower when measured in relation to the risk-weighted assets.[19] Despite this, the three major Swedish banks still have risk-based capital ratios that are higher than the EU average (Diagram 26).

The banks also meet the forthcoming leverage ratio requirement by a comfortable margin, but they are just under the EU average (Diagram 27). FI's overall assessment is that the three major banks have satisfactory capital buffers and margins to the capital requirements, which makes them resilient to losses and a dip in profitability. This assessment was also confirmed by the stress tests conducted by the European Banking Authority (EBA) in the autumn of 2018.[20]

BANKS HAVE LARGE EXPOSURES TO REAL ESTATE

Approximately 68 per cent of the total lending of the three major banks is associated with the housing and commercial real estate (Diagram 28). Mortgages constitute the largest percentage, but lending to commercial real estate firms and tenant-owner associations is also significant. The developments on the real estate market therefore have a major impact on both the banks' financial position and confidence in them.

FI currently considers the risk that the banks will post major credit losses on Swedish mortgages to be limited. FI's stress tests show that most new mortgagors have a good repayment ability even under financial stress (see *Corporate and household debt*). At the same time, the high level of household debt constitutes a macroeconomic risk, for example because high interest expenses combined with rising unemployment and falling share prices could result in lower consumption. This in turn could amplify a downturn in the economy, introducing a risk of a more severe financial crisis.

Risks in the real estate sector could be underestimated

In total, the three major Swedish banks' lending to the commercial real estate sector amounts to around SEK 1,370 billion.[21] Real estate firms have benefited from the very strong economy, particularly in

18 For more information, see Risk weight floor for Swedish mortgage exposures, August 2018, FI.

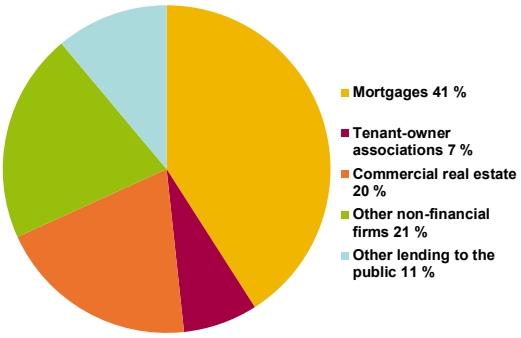
19 A general difficulty when comparing key ratios expressed as a per cent of the risk-weighted assets is that changes can occur that affect redistributions between components rather than the underlying risk or changes to the requirements in nominal terms. Changing the risk weight floor for mortgages from a Pillar 2 requirement to a Pillar 1 requirement is one example of this.

20 For more information, see Stability in the Financial System, November 2018, FI.

21 The figure refers to the major banks' total exposures, at group level, to commercial real estate in the entire world.

28. Distribution of the major banks' credit portfolios

Per cent

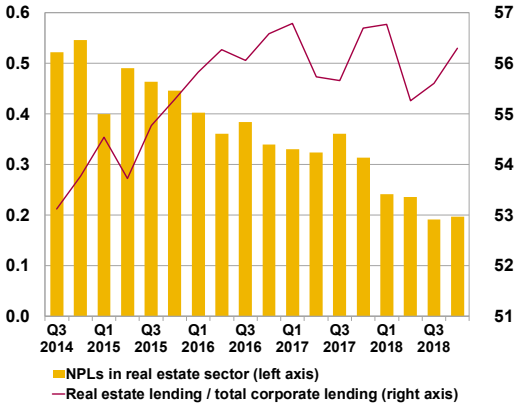


Source: FI.

Note. Data from 2018. Refers to the major banks' lending to the public at a consolidated level. Refers to SEB, SHB and Swedbank.

29. Share of real estate lending has stopped growing.

Per cent

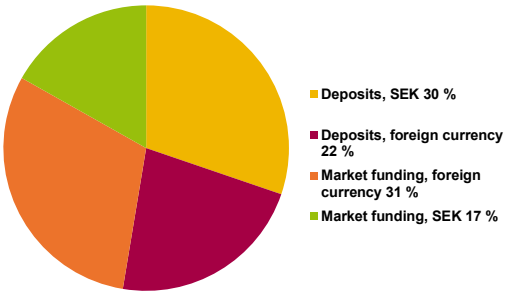


Source: FI.

Note. Major banks' allocation of total assets. Refers to SEB, SHB and Swedbank. "Firms" refers to non-financial firms.

30. Half of the major banks' funding is in foreign currency

Per cent



Source: FI.

Note. Data for Q4 2018. Equity and liabilities related to insurance business are not included in the calculation of the banks' liabilities. Refers to SEB, SHB and Swedbank.

Sweden. As a result, the non-performing loans among real estate firms fell to very low levels (Diagram 29).

The commercial real estate sector is sensitive to business cycle fluctuations and the interest rate. Due to the banks' extensive lending to the sector, they could experience large credit losses if the sector were to experience problems. It is therefore important for the banks to hold sufficient amounts of capital to be able to manage credit losses associated with lending to this sector. FI makes the assessment – based in part on stress tests – that the banks underestimate the risk associated with the lending to the commercial real estate sector and thus hold less capital than they should to cover this risk. In order to handle these problems, the banks need to hold more capital for real estate lending. Therefore, FI will implement a measure already in 2019 to increase the banks' capital (see *Corporate and household debt*). From a longer-term perspective, FI makes the assessment that the model review being conducted by the EBA could achieve this purpose.[22]

Even though FI considers the banks not to be holding enough capital for their exposures to the commercial real estate sector, FI considers the banks' total capital, including buffers, to provide satisfactory resilience in general. A shock isolated to the real estate sector therefore is not necessarily a threat to the banks' solvency and financial stability (see *Corporate and household debt*).

BANKS' RESILIENCE REFLECTED IN MARKET CONFIDENCE

Banks often lend money on longer terms than what they finance their operations with. This means that they are exposing themselves to a refinancing risk, i.e. the risk of not being able to replace maturing funding at a reasonable cost. In order to counteract this risk, it is important for investors and depositors to have a high level of confidence in the banks. The Swedish banks differ from many other European banks since they are more dependent on market financing, of which a large portion comes from foreign investors (Diagram 30). This makes it even more important to protect the confidence in the banking system and place strict requirements on the banks being sufficiently prepared for less favourable market conditions.

Capital buffers are one way to maintain confidence in the banks' ability to manage losses. In addition to this, FI also imposes requirements on how the banks manage their liquidity risks. It is also important for the banks to run their operations in a manner that maintains their reputation, i.e. that they have good governance and control over their operations and risks.

Low funding costs

The fact that borrowing costs are generally low indicates a high level of confidence in the three major Swedish banks, but they are also due to low risk premiums and investors' search for returns given the low interest rates (see *Threats to financial stability*). The confidence is reflected in that the three major Swedish banks have had in general higher external credit ratings[23] than other European banks in recent

22 For more information about the model review, see Memorandum New requirements for institutions using the IRB approach, November 2018, FI.

23 For senior uncovered borrowings.

31. Low funding costs for Swedish mortgages

Basis points

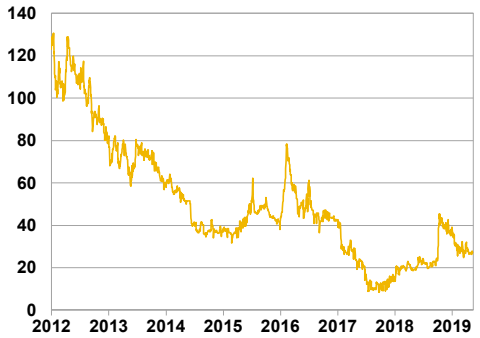
Average credit spread for five-year mortgage bonds

Source: Thomson Reuters Eikon.

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

32. Recent increase in credit spreads

Basis points



Average spread between the banks' senior CDS and CDS for Sweden

Source: Thomson Reuters Eikon.

Note. Spread senior CDS (credit default swap) bank vs. Sweden CDS. Refers to SEB, SHB and Swedbank.

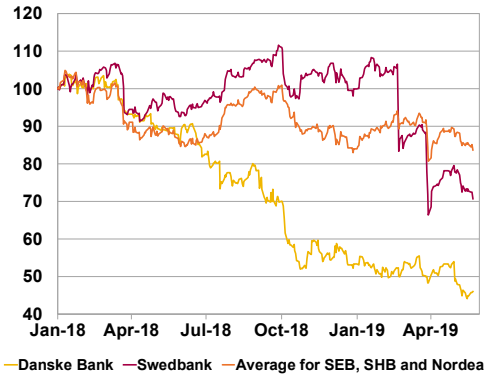
years. This view is strengthened by the low too-big-too-fail premium.[24]

Market confidence in the three major banks is noticeable in the borrowing costs for Swedish covered bonds, which continue to be at historically low levels (Diagram 31). Borrowing costs did increase sharply in Q4 2018, but they are still very low from a historical perspective. The credit spreads for the three major banks' unsecured debt has generally followed the same trend (Diagram 32).

The increase in borrowing costs since October 2018 could be in part due to the reports of money laundering at a number of Scandinavian banks, which had a clear impact on the price-setting of some banks' shares and borrowing. The price fluctuations have been the most extreme for shares and less extreme for the three major banks' securities borrowing. This is a sign that the uncertainty is primarily associated with the future earnings of the banks in question and their ability to repay the investors holding their debt instruments (see *Reports of money laundering have impact on financial markets*).

33. Share prices fell sharply

Index, 2018-01-01=100



Source: Thomson Reuters Datastream.

ANALYSIS – Reports of money laundering have impact on financial markets

Suspicions of money laundering in the Baltics surfaced in 2018 and received wide coverage in the media. The reports focused initially on Danske Bank's Estonian operations, but later also included Swedish banks, and Swedbank in particular. The reports caused a clear reaction in the market, and the share prices of the above-mentioned banks fell sharply on several occasions in connection with the publication of new revelations (Diagram 33).

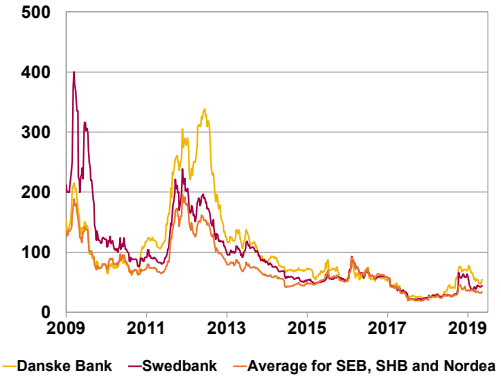
Banks' borrowing costs were also affected, and it has become slightly more expensive for them to obtain funding (Diagram 34). However, in this respect the developments have been significantly less dramatic than what occurred in conjunction with the global financial crisis. This is a sign that investors in the banks' debt instruments still have confidence in the banks' capacity to pay back their debts if they were to default.

In comparison to the turbulence in conjunction with the global financial crisis and the resultant EUR crisis, the market reactions have been limited overall. Even if FI does

24 For more information, see FI Analysis 15, Do banks benefit from an expectation of an implicit state guarantee?, January 2019, FI.

34. Credit spreads increased slightly

Basis points



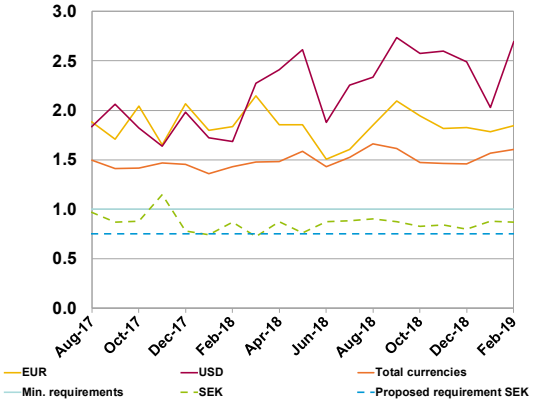
Source: Thomson Reuters Datastream.

Note. CDSs denominated in EUR on banks' senior debt. Maturity of 5 years.

not currently consider the problems to constitute a threat to financial stability, FI still views the situation very seriously. The events have clearly shown how important it is for banks to protect their reputation through good governance and control of their risks. The events have also shown how important it is for the banks to be sufficiently resilient to manage unexpected situations and a dip in market confidence.

35. Major banks have high liquidity coverage ratios

Ratio



Source: FI.

Note. The minimum requirement refers to the liquidity coverage ratio for total currencies in accordance with Commission Delegated Regulation (EU) 2015/61 and FI's Pillar 2 requirements on liquidity coverage ratios in individual currencies. Average major Swedish banks. Refers to SEB, SHB and Swedbank.

Major banks meet liquidity requirements

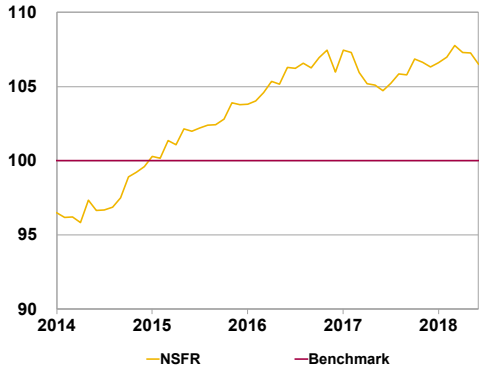
In order to reduce liquidity and refinancing risks, FI imposes minimum requirements on the banks to ensure they hold sufficient liquidity buffers. These buffers can be drawn upon to handle a short-term liquidity stress.

The three major Swedish banks meet the LCR ratio requirement (LCR), not only for all currencies in total – which corresponds to the minimum requirement – but also for the individual currencies EUR and USD (Diagram 35).[25] FI has also submitted a proposal for consultation that banks must need to have an LCR requirement of at least 75 per cent for all other significant currencies.[26]

To improve the banks' matching of assets and liabilities with longer maturities, the Basel Committee has developed a new minimum liquidity requirement called the Net Stable Funding Ratio (NSFR). This requirement has not been implemented yet, but the three major Swedish banks' indicative NSFR levels are already above the forthcoming requirement (Diagram 36).

36. Major banks above the proposed NSFR requirement

Per cent



Source: Sveriges Riksbank.

Note. Refers to the major Swedish banks' available stable financing in relation to the stable financing required under the Basel Committee's definition from 2014. The benchmark is 100. Refers to SEB, SHB and Swedbank.

25 The LCR regulations are set out in Commission Delegated Regulation (EU) 2015/61 of 10 October 2014 to supplement Regulation (EU) No 575/2013 of the European Parliament and the Council with regard to liquidity coverage requirement for credit institutions and FI's Pillar 2 requirements on the LCR ratio for individual currencies. For EUR and USD, respectively, the LCR requirement is 100 per cent. For other significant currencies (primarily SEK), FI has proposed a new LCR requirement of 75 per cent under Pillar 2.

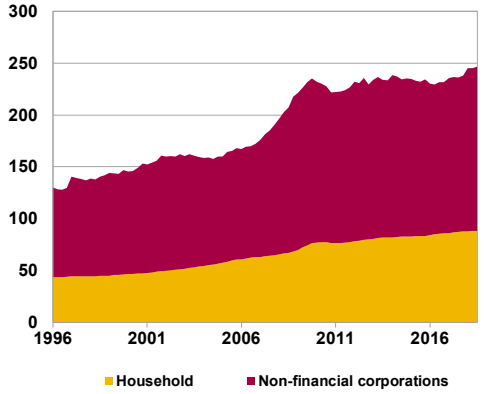
26 For more information, see the Consultation Memorandum *FI's liquidity coverage ratio requirements in individual currencies and diversification of covered bonds in the liquidity buffer,* March 2019, FI.

Corporate and household debt

The debt of non-financial firms and households is high, and it is growing faster than what FI considers to be sustainable in the long run. Risks associated with household debt are judged to have decreased slightly. However, FI considers there to be significant vulnerabilities within the commercial real estate sector. Real estate firms are sensitive to interest rates, and stress tests show that this could result in large credit losses for banks. FI therefore intends to impose higher capital requirements on the banks to cover risks associated with lending to commercial real estate firms already in 2019.

37. Firms and households have large debt

Per cent of GDP

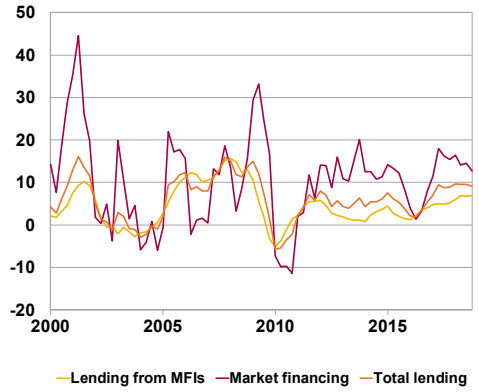


Source: Statistics Sweden.

Note. Refers to unconsolidated debt for non-financial corporations.

38. Debt is increasing among firms

Annual change in per cent



Source: Statistics Sweden.

Note. MFI stands for monetary financial institution.

Loans offer households and firms the possibility of smoothing out their consumption and investments over their life cycle. This contributes to a more efficient use of capital. Therefore, loans are in many ways good for the economy. On the other hand, though, a high level of debt makes both lenders and borrowers vulnerable to shocks and can thus affect the entire economy and by extension threaten financial stability. It is therefore important for FI to follow the vulnerabilities debt poses to households and non-financial firms. If needed, FI can take action to counteract imbalances and mitigate stability risks.

HIGH DEBT AMONG NON-FINANCIAL FIRMS

Swedish non-financial firms have a high level of debt (Diagram 37). The majority of these firms' loan-based financing consists of bank loans, even if market financing has increased. If firms experience problems, in a worst-case scenario they may go bankrupt, which could result in losses for banks. Non-financial firms therefore play a central role in financial stability. A shock to the financial system could also impair the credit supply. This would make it more difficult for firms to secure financing, thus leading to fewer investments or even repayment problems, which could lead to an economic downturn.[27]

Non-financial firms are active in a number of sectors that are very different from one another. The extent to which these sectors impact financial stability depends on their size, degree of debt financing, stability in cash flows, dependence on the economic cycle and interconnectedness with the financial system.

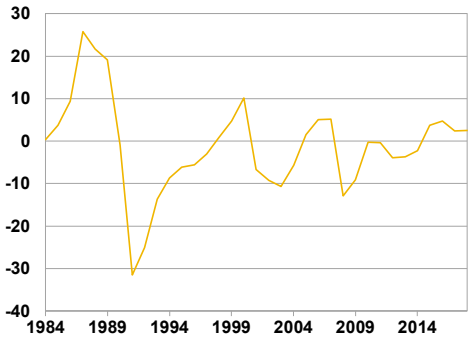
The total debt of non-financial firms is continuing to grow rapidly. During Q1 2019, this debt grew by 7 per cent on an annual basis (Diagram 38). Corporate debt is also increasing rapidly in relation to GDP. Growth is driven primarily by these firms' market financing via bonds and commercial paper.[28] Banks are also lending more to non-financial firms. FI makes the assessment that the banks' lending to corporates will continue to increase in the future. By the end of 2021, this lending is expected to grow by around 6 per cent on an annual basis.

27 For more information, see Stability in the Financial System, November 2018, FI.

28 For more information, see Stability in the Financial System, May 2018, FI.

39. Real estate prices grow faster than net operating income

Percentage points

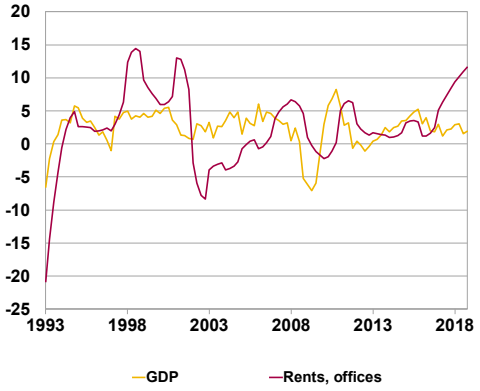


Sources: FI and MSCI.

Note. This is a valuation measure for real estate that relates market value to firms' net operating income.

40. Office rents have increased rapidly

Annual change in per cent

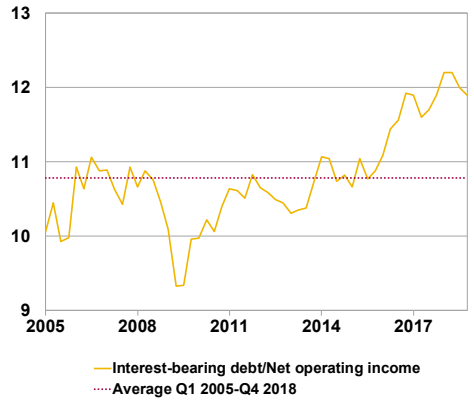


Sources: Pangea and Statistics Sweden.

Note. Growth in office rents refers to A locations throughout the country. The annual value is extrapolated to a quarterly average.

41. Higher leverage of cash flows among real estate companies

Ratio



Source: Catella.

Note. Refers only to listed real estate companies on Nasdaq Nordic main market.

The sectors Real estate activities, Manufacturing, and Trade have the highest debt. Together, they represent almost 60 per cent of total corporate debt. The real estate sector is the largest with more than 30 per cent of the non-financial firms' total debt.

COMMERCIAL REAL ESTATE MARKET

The commercial real estate sector has historically played a significant role in financial crises. The Swedish market is large, cyclical and largely debt-financed. This means that the real estate sector has a stronger link to the financial system than other non-financial sectors do. Several indicators are showing that there are elevated risks on the commercial real estate market.[29]

Commercial real estate prices have increased

Real estate prices have increased in recent years (see Diagram 5 of *Threats to financial stability*). This means that prices could fall relatively dramatically in the event of a shock. A combination of higher net operating income and falling yield requirements from investors is the primary driver behind the rising real estate prices. However, in recent years, real estate prices have grown faster than the real estate firms' net operating income (Diagram 39). Historically, episodes such as this have often been followed by a fall in prices. Because expectations of future income have a major impact on prices, an overly optimistic view of the future could make real estate buyers more willing to pay prices that later prove to be unrealistic.

Good earnings among real estate firms

Real estate firms have been experiencing strong economic conditions, including rising occupancy rates and rent levels, which have helped improve the firms' earnings. Office rents have increased faster than GDP over the past two years (Diagram 40). Improved operating surpluses and rising real estate values have resulted in high total returns. This supports the view that the firms' currently have a strong financial position, but they could also be affected by a sharp downturn in the economy (see *Threats to financial stability*).

The direct yield on commercial real estate has fallen to a historically low level. One reason for today's low direct yield is that the risk-free interest rate is low. That said, however, the risk premium investors are demanding to invest in real estate is high from a historical perspective. Previously, when imbalances emerged that eventually led to a fall in prices, the risk premium on real estate has been low or negative. Therefore, today's high risk premium could be interpreted as investors factoring in the uncertainty in the future net operating income when real estate is valued.

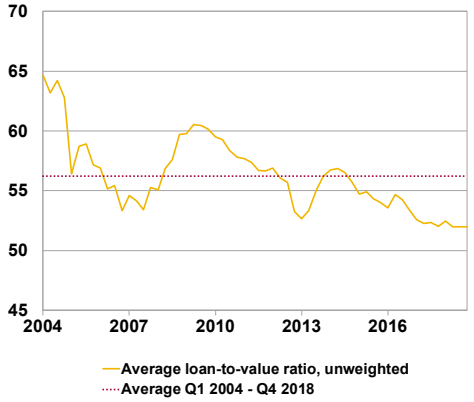
Debt in the real estate sector has grown rapidly in recent years

Listed real estate firms' interest-bearing liabilities in relation to income are high despite high and rising earnings (Diagram 41 and *Stability in the banking sector*). In Q4 2018, the debt of real estate firms was on average 11.9 times larger than their net operating profit.

29 For more information, see the Commercial Real Estate Market and Financial Stability, May 2019, FI.

42. Falling loan-to-value ratios

Per cent



Source: Catella.

Note. Refers only to listed real estate companies on Nasdaq Nordic main market.

Despite the increase in total debt, the average loan-to-value ratio of listed commercial real estate firms has fallen. The ratios are currently relatively low from a historical perspective (Diagram 42). The reason for this is that the market value of real estate has increased faster than the firms' debt.

REAL ESTATE FIRMS ARE SENSITIVE

A high level of debt makes both lenders and borrowers vulnerable to shocks. Real estate firms are able right now to cover the cost of their interest-bearing debt by a comfortable margin. The interest coverage ratio shows that the firms' net operating income in 2017 was approximately 4.5 times larger than their interest rate expenses. The interest coverage ratio has improved in recent years. Stress tests indicate that real estate firms are primarily sensitive to interest rates and that rising interest rate expenses are probably a larger problem than variations in rental income (see *Stress test and benchmark analysis highlight vulnerabilities*).

ANALYSIS – Stress test and benchmark analysis highlight vulnerabilities

FI conducted a two-part study to investigate whether the banks hold sufficient capital to withstand a severe shock to the commercial real estate market.

The first part investigates whether the capital requirements (calculated in accordance with the banks' IRB approaches) ensure that the bank in question has sufficient capital to absorb losses from commercial real estate lending. A benchmark analysis compared the banks' capital requirement calculations for similar exposures to commercial real estate firms. The analysis shows that the banks' risk weights for lending to commercial real estate firms vary significantly between firms and the estimated loss risk is systematically below the benchmarks from an external credit analysis firm. This implies that the estimated capital requirement according to the IRB approach does not ensure a sufficient ability to absorb credit losses in a crisis.

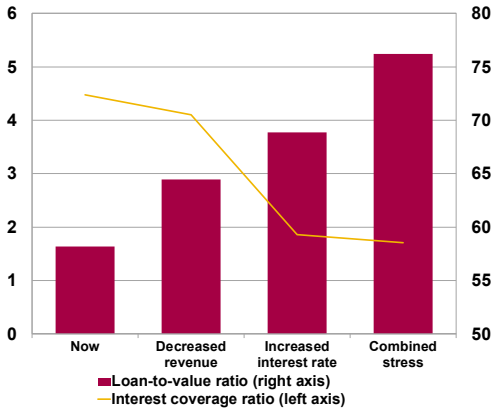
The second part of the study takes a closer look at the risks and vulnerabilities on the commercial real estate market in Sweden and how these can affect the banks.30 For this part, FI gathered detailed information from banks that have extensive lending to commercial real estate firms.31 This material refers solely to loans recognised in Sweden. Based on this material, FI conducted three stress tests of the commercial real estate sector. The stress tests analyse how the firms' interest coverage ratio and loan-to-value ratio are affected if the interest rates the firms pay were to rise or their net operating income were to fall. Applying stress to the interest

30 For more information, see the Commercial Real Estate Market and Financial Stability, May 2019, FI.

31 The benchmark analysis of the loans to commercial real estate firms includes data from Danske Bank, Handelsbanken, Nordea, SEB and Swedbank. Commercial real estate is defined as properties owned with the objective of generating income by renting out the property to tenants. This includes offices, retail, hotel, and logistics properties as well as housing properties and community properties. Community properties owned and used by the public sector (state, municipal and country) are not included in the study. Not only are these types of properties seldom sold, but they are also not associated with the same risk to financial stability as other real estate firms depending on their ownership and the stability of the rental income. The study also does not include agricultural and forestry property.

43. Real estate companies are sensitive

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

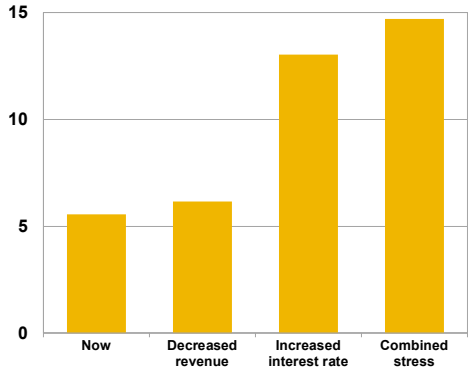


Source: FI.

Note. Median. The increase in interest rates is assumed to result in an increase in the average direct yield requirement of 1 percentage point.

44. High percentage of debt with elevated credit risk

Per cent



Source: FI.

Note. The percentage of debt with elevated credit risk refers to debt at firms with an interest coverage ratio less than 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. "Combined stress" refers to the combination of stressed revenue and stressed interest rates. The increase in the interest rate is assumed to also entail an increase in the average direct yield requirement of 1 percentage point.

coverage ratio and the loan-to-value ratio indicates whether the firm could experience problems or even become bankrupt. The calculations in these stress tests offer a simplified view of the effects. For example, the firms are assumed to be immediately affected by the changes, and no consideration is given to any interest rate hedges or other measures that could reduce vulnerability.

There is no absolute threshold for when the interest coverage ratio is too low. If the interest coverage ratio is less than 1, this means that the firms do not have a sufficiently large net operating income for cash flow to cover running interest rate expenses. This is therefore an indication that a firm is experiencing problems, but it does not necessarily mean that the firm cannot make its interest payments. Firms often pledge the property or use some other form of collateral, but a high loan-to-value ratio means greater vulnerability. A low interest coverage ratio (less than 1) combined with a high loan-to-value ratio (above 70 per cent is used as the limit in the stress test) is an indication of greater vulnerability. Based on the stress test, FI makes the assessment that it is the debt of the firms with this combination that constitutes an elevated credit risk for lenders to the real estate sector.

In the scenario with a drop in revenue, where net operating income decreases by 15 per cent, the real estate firms' average interest coverage ratio drops to 4.1 from 4,5.[32] This is a relatively small effect. However, the impact on the real estate firms' loan-to-value ratios is larger. In the scenario with a higher interest rate, real estate firms' average interest expense increases to 3.5 per cent (an increase of 2 percentage points). The interest coverage ratio falls in this scenario to an average of 1.9. The loan-to-value ratios also increase given such a scenario. When combining the stresses, and the firms experience both lower rental income and higher interest expenses, the interest coverage ratio falls even further and the loan-to-value ratio rises even more. The outcome of the stress tests shows that some real estate firms would experience an interest coverage ratio that is so low and a loan-to-value ratio that is so high that their debt could constitute an elevated credit risk for lenders in accordance with FI's definition of elevated credit risk.

At the outset of the stress test, the real estate firms with both a low interest coverage ratio (less than 1) and high loan-to-value ratio (above 70 per cent) represented around 6 per cent of the firms' total debt. Given the combined stress, where the firms experience a fall in both revenue and net operating income, higher interest expenses and an increase in the yield requirement, the debt that according to FI's definition is considered to have an elevated credit risk increases to almost 15 per cent of the firms' total debt. The outcome of FI's stress tests indicates that the commercial real estate firms are vulnerable. The increase in the volume of debt with elevated credit risk could lead to credit losses under stressed conditions that are larger than the capital the banks are holding for anticipated credit losses of this type.

The financial position of the real estate firms is relatively good, but the increase in debt among commercial real estate firms makes them vulnerable. FI does not consider the banks' low provisions for capital to cover their lending to commercial real estate firms to be a threat to financial stability. Firstly, the direct macroeconomic contagion effects

32 For the firms for which their real estate holdings consist primarily of residential and community properties, we assume that the net operating income decreases by 5 per cent. The reason for this is that the occupancy of residential and community properties as a rule is more stable than the occupancy of office properties.

from the commercial real estate market would probably be limited. Secondly, FI considers the banks' total capital buffers to be sufficient for covering both the losses that could arise via the commercial real estate sector and other lending in a severe scenario.

However, FI believes the banks should hold sufficient capital in each segment to manage the credit losses that could arise in a crisis. This helps create sound incentives for the banks in their lending to the sector, prevent the sector from borrowing at unhealthily low interest rates, and increase the resilience in the banking sector. FI's stress tests indicate that the banks' capital requirements for lending to commercial real estate are too low in relation to the credit losses that could arise given severe financial stress. The results of FI's benchmark analysis of the Swedish major banks' capital requirements for lending to commercial real estate firms also indicate that the banks underestimate the loss risks for the sector. Overall, FI therefore makes the assessment that the banks are underestimating the risk in their lending to the commercial real estate sector and therefore are not setting aside enough capital to cover these loss risks.

As a result of the EBA's overview of the IRB regulatory framework, the requirements on the banks' internal ratings-based models are going to be tightened through the introduction of new guidelines and technical standards.[33] FI takes the position that the banks will need to implement several changes to their models to be able to comply with the new, stricter requirements. FI makes the assessment that this could result in higher capital requirements for several exposure classes, including real estate exposures. However, these stricter requirements will impact the banks' internal ratings-based models and capital requirements first at the end of 2020. There is also some uncertainty surrounding the degree to which the model revisions will fully cover the identified risks.

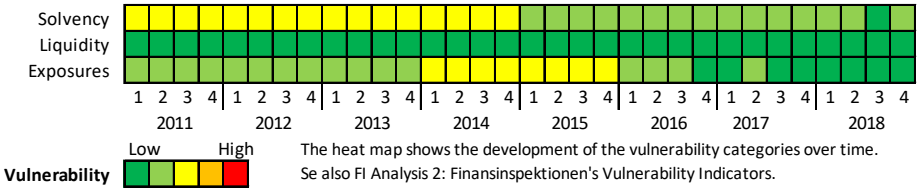
FI therefore sees a need to take action already in 2019 to ensure that the banks already in the short term hold capital to cover risks associated with lending to commercial real estate firms. FI will analyse in more detail how much the capital requirement should be raised in response to the loss risks in commercial real estate lending. FI's preliminary assessment is that the risk weights in the banks' commercial real estate lending should on average be at least 30 per cent. Today, these risk weights are at around 23 per cent. In comparison, the risk weight of mortgages for housing is 25 per cent.

Following the completion of the analysis of the capital need, FI intends in the autumn of 2019 to decide on a Pillar 2 measure requiring the banks to hold capital that covers the risks in their lending to commercial real estate firms. The Pillar 2 requirement can be adjusted later if the overview of the IRB regulations result in an increase in the risk weights that is large enough for the capital requirements to cover the loss risks in the commercial real estate lending. The capital requirement surcharge will create sounder incentives for the banks' lending to commercial real estate firms and strengthen their resilience in the short term and the long term.

33 For more information, see Memorandum Requirement on IRB models for exposures to commercial real estate, May 2019, FI.

HOUSEHOLD DEBT

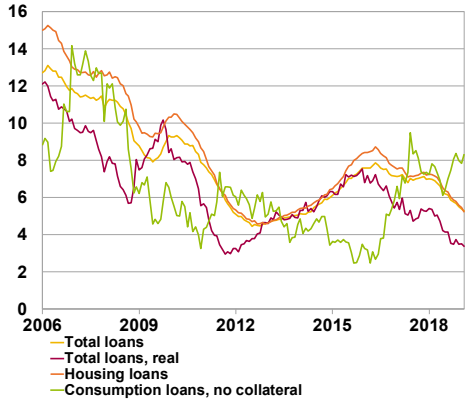
Vulnerability indicators for the household sector



The heat map shows the development of the vulnerability categories over time. Se also FI Analysis 2: Finansinspektionen's Vulnerability Indicators.

45. High but slowing growth for household debt

Per cent

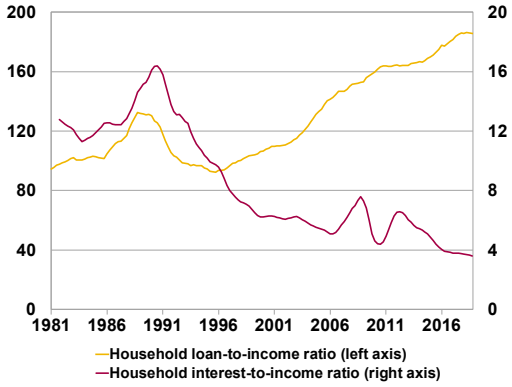


Source: Statistics Sweden.

Note. Annual rate of growth is adjusted for reclassifications, revaluations and bought and sold loans.

46. Loan-to-income ratio and interest-to-income ratio

Per cent (left axis) and ratio (right axis)



Source: Statistics Sweden.

Note. Both loan-to-income ratio and interest-to-income ratio are in relation to income. The interest-to-income ratio refers to a four quarter moving average.

FI's vulnerability indicators place household debt in relation to income and assets.[34] Right now, the indicators show that households as a group have strong finances and their debt is not a direct threat to financial stability. However, even if the resilience of households is satisfactory in the sense that households are able to make their debt payments, many households have high debt (Diagram 37). This means that many households may need to make significantly cut-backs and reduce their consumption in the presence of major economic shocks. In turn, this could worsen a crisis and, ultimately, constitute a threat to financial stability.

Household debt has risen for a long period of time and is at a historically high level (Diagram 45). However, this growth has slowed in recent years. During Q1 2019, lending to households grew by 5.5 per cent on an annual basis. This means that household debt amounted to 186 per cent of their aggregate disposable income. Debt in relation to disposable income has declined slightly two consecutive quarters. This is the first time this has occurred since 1995 (Diagram 46).

At the same time as debt has grown rapidly, so have households' liquid assets.[35] Households' assets contribute to their resilience. In the autumn, asset prices fell and the financial position of households deteriorated somewhat, but as asset prices recovered so has their position (see *Threats to financial stability*). Total household savings are high, which could indicate that households on average have strong balance sheets, but assets and savings, just like debt, are not evenly distributed between households. This makes it difficult to measure the resilience resulting from the households' assets.[36]

Lower percentage of households with large loans relative to income

Even though households' aggregate debt is growing slower than before, there continues to be a high percentage of households with high debt in relation to the value of their home and their income (Diagram 47). The regulations FI has introduced aim to strengthen borrowers' resilience and reduce the share of households with a high level of

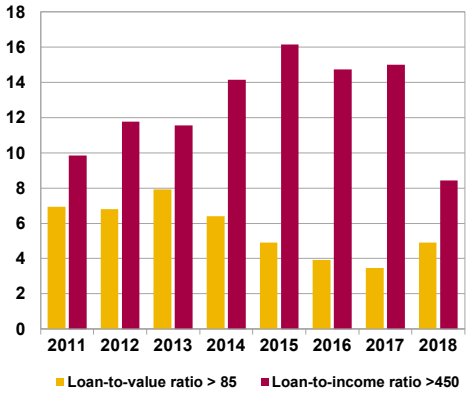
34 The vulnerability indicators are described in more detail in *FI Analysis 2: Finansinspektionen's Vulnerability Indicators*, 2015, FI.

35 Liquid assets consist of bank savings, bonds, Swedish and foreign shares and funds.

36 See Waldenström, Bastani and Hansson (2018), "How Should Capital Be Taxed? A Swedish Perspective", SNS Economic Policy Report 2018, SNS förlag.

47. Smaller percentage of new mortgagors with high loan-to-income ratio

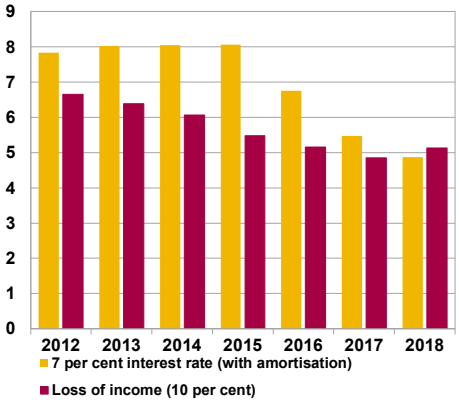
Per cent



Source: FI.

48. Smaller percentage with deficit under stress

Per cent



Source: FI.

Note. The percentages refers to the point in time when loan is granted. Stress scenario with 7 per cent interest rate is estimated with amortization requirement. Interest rate is 2 percent in the unemployment rate scenario.

debt. Following the introduction of the stricter amortisation requirement in March 2018, the percentage of new mortgagors with high loans in relation to their income has decreased significantly.[37]

HOUSEHOLDS CAN MAKE DEBT PAYMENTS EVEN IN STRESSED CONDITIONS

FI makes the assessment that households with new mortgages are sufficiently resilient to make debt payments in the presence of shocks. FI's stress tests show that only a small number of households would not be able to make their debt payments if interest rates or unemployment were to rise (Diagram 48).[38]

FI's regulations on the mortgage market have targeted new mortgagors. The first amortisation requirement was introduced in the spring of 2016 and has now applied to new mortgagors for three years. Prior to this requirement, the Swedish Bankers' Association had recommendations regarding amortisation for new mortgagors with a high loan-to-value ratio. Together, these measures have meant that the amortisation payments in the banks' mortgage portfolios as a percentage of total mortgages have continued to rise. In 2018, the aggregate amortisation rate was 1.8 per cent. FI estimates that the introduced regulations will continue to reduce the percentage of households with high debt over time.

HIGH DEBT AND FINANCIAL STABILITY

Households have high levels of debt even if the growth rate and the percentage of new mortgagors with high debt have decreased. Households are able to make their debt payments, which means that the probability of significant credit losses associated with the banks' mortgage exposures is low. However, the high levels of debt mean that households may need to cut back on their consumption or in some other way change their behaviour to continue to make their debt payments in the presence of a shock. This could accentuate an economic downturn, potentially turning it into an economic crisis.[39] If households with high debt make large reductions to their consumption following a shock, this could also affect the creditworthiness of non-financial firms and thus lead to elevated credit losses in this part of the banks' balance sheets. Household debt therefore still constitutes a threat to macroeconomic stability. FI also considers the measures it has introduced to have had the desired effect and that the risks associated with household debt have declined slightly since the last report on the stability in the financial system.

37 For more information, see FI Analysis 17, Vulnerability Indicators for Liquidity, 2019, FI.

38 For more information, see The Swedish Mortgage Market 2019, March 2019, FI.

39 See, for example, Bunn and Rostom (2014), Household debt and spending, Bank of England Quarterly Bulletin 2014 Q3.

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