



FINANSINSPEKTIONEN

Stability in the financial system

1 DECEMBER 2015





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FI AND FINANCIAL STABILITY

● FI's financial stability report

One of FI's primary tasks is to promote a stable financial system. The Government has therefore given FI the task of reporting twice a year its assessment of financial stability and potential financial imbalances in the Swedish economy. The report *Stability in the financial system* describes the vulnerabilities and risks FI assesses could possibly jeopardise the stability of the financial system in Sweden. We also discuss possible measures to reduce these vulnerabilities and risks.

● The financial system is important but vulnerable

The financial system plays an important role in the economy. A stable and smoothly-functioning financial system is necessary for the economy to function and grow. A serious crisis in the financial system could lead to extensive costs for the economy and society.

Financial systems are vulnerable. This applies to both individual financial companies and financial markets. For instance, banks typically have a limited capacity to absorb losses. Moreover, Swedish banks are dependent on obtaining regular funding by issuing securities and they are therefore sensitive to disruptions on the markets they use for funding. The different parts of the financial system are closely interlinked, which means that problems arising in one part of the system can quickly spread to other parts. The contagion risks increase in situations where the functioning of the financial markets deteriorates.

Financial stability concerns the financial system being able to maintain its basic functions – mediating payments, converting savings into financing and risk management – even under unfavourable circumstances. The system should have a good resilience to shocks.

However, the financial sector can create and reinforce socio-economic problems even if the basic functions are maintained and the financial system as such is stable. FI has therefore had an extended assignment from the Government as of 2013 that entails supplementing the traditional objective of safeguarding the stability of the financial system with the objective of counteracting unbalanced developments in the credit market.

● The supervisory task

The main task of the supervisory work is to influence the balance between risk-taking and resilience to reduce the vulnerability of the financial system: Financial firms have neither sufficient oversight nor sufficient motivation to fully build up this type of resilience on their own. But the supervisory work does not aim to minimise all risks – this would considerably reduce efficiency. The supervision of the financial market aims to achieve a balance between stability and efficiency.



Erik Thedéen, Director General

Summary

Finansinspektionen (FI) assesses that the resilience of the financial system in Sweden is satisfactory. Swedish banks have relatively plentiful capital and stable earnings. At the same time, the large share of short-term market funding makes them vulnerable to a decline in confidence among international investors. The continuing strong development on the housing market means that household indebtedness is growing at a rapid pace. This entails increased risks for economic stability.

The global economic recovery is continuing, but is uneven. The US economy is continuing to recover, at the same time as developments in emerging markets have weakened. Economic activity in Europe is recovering slowly, but there is still a risk of setbacks. A severe weakening of economic activity in Europe could threaten stability in the European financial system and thereby damage the Swedish banks' financing alternatives. Given that economic developments in Europe have stabilised since last summer, however, the risk of such a shock is thought to have declined somewhat over the past six months.

Global real interest rates are still very low, which leads to high asset prices in Sweden and around the world. Low interest rates have contributed to investors seeking riskier assets to maintain their yield and this has pushed down spreads between more and less risky assets. A rapid upturn in these spreads – for instance, as a result of a change in investors' expectations of future interest rates – could cause financial instability. At the same time, there has already been some adjustment in risk premiums and asset prices, which has reduced the risk of this happening in relation to the situation six months ago.

SATISFACTORY RESILIENCE, BUT STILL VULNERABILITIES

FI assesses that the Swedish financial system as a whole is functioning efficiently and currently has satisfactory resilience. However, the vulnerabilities identified by FI earlier still remain. These vulnerabilities mean that the Swedish financial system and the Swedish economy are sensitive to shocks.

FI defines a vulnerability as a lasting characteristic of the financial system that does not entail problems under normal circumstances. When the system suffers a shock, for instance, turbulence on the international financial markets, this together with the vulnerability may lead to financial and economic instability. As shocks often occur suddenly and are almost always beyond FI's control, it is difficult to prevent them. FI's work therefore aims to strengthen resilience and in this way reduce the negative impact of the vulnerabilities in turbulent times.

The Swedish financial system is large and the different parts of the system are interlinked, for instance, through the major banks owning one another's bonds. This interlinking is necessary in a modern and efficient financial system, but entails a vulnerability as it means that problems can rapidly spread between different agents.

Swedish households tend to save in other forms than deposit accounts with the banks, which means that Swedish banks finance themselves to a

large degree on the securities markets. Swedish banks use a relatively large share of short-term market funding to finance assets with longer maturities. This means that the banks are regularly exposed to refinancing risks, which makes them vulnerable to financing shocks and are dependent on the continued confidence of their investors. If the banks experience funding problems, these can also be aggravated by the fact that the banks are interlinked.

SWEDISH BANKS HAVE GOOD RESILIENCE

The Swedish banking sector still has a good resilience to shocks. The banks have stable earnings that mean they can absorb losses in a crisis, which contributes to making the financial system more stable. The Swedish banks have sufficient capital and meet FI's capital requirement. The requirements made of Swedish banks are currently twice as high as the EU minimum requirements. Moreover, in June, FI decided to raise the countercyclical buffer from 1.0 to 1.5 per cent to further strengthen the banks' capital position. Large capital buffers strengthen the banks' resilience.

FI holds the view that the capital requirements for the banks shall be risk-sensitive and that the best way to achieve this is to allow the use of internal models, at least in part. However, FI's supervision work shows that the banks have to some extent worked on what is known as risk-weight minimising, which means that they take advantage of the scope for interpretation in the regulations on internal models to minimise the capital requirement. For instance, the average risk weights for company exposures have declined from around 60 to just over 30 per cent since 2007. This is due to a large extent the banks improving their risk management but also a consequence of risk-weight minimisation. FI therefore considers that the regulations for internal models should be tightened. In the long run, this will be achieved through international agreements and European legislation. At the same time, FI is investigating various means of quickly improving the management of model risks and dealing with certain specific weaknesses in the construction of the internal models.

SYSTEMICALLY-IMPORTANT MARKETS NEED TO FUNCTION EVEN UNDER FINANCIAL STRESS

Systemically-important financial markets are markets that need to function so that the financial system can carry out its central tasks. FI assesses that it is primarily the fixed-income and foreign exchange markets that are systemically important, as it is these markets that financial companies use for their day-to-day financing and risk management. If these markets cease to function, companies could experience problems in managing their payments or hedging against, for instance, foreign exchange risks.

An efficiently-functioning market is characterised by, for instance, good market liquidity, which means that large volumes can be bought or sold without affecting the price too much. There are signs that market liquidity has deteriorated substantially at certain points in time recently, and critics say that this is a result of the new regulations. FI has therefore examined market liquidity in the Swedish covered bonds market, which is an important funding instrument for the major banks. The examination shows that the market liquidity measured for these bonds has not markedly deteriorated in recent years.

However, market liquidity is dependent on the general market conditions. Under favourable conditions, liquidity is good while it is generally poorer in times of financial stress. During the period surveyed, market conditions were relatively beneficial, which makes it difficult to comment on market liquidity for covered bonds in a stressed situation.

HIGHLY-LEVERAGED HOUSEHOLDS ARE VULNERABLE TO FALLING HOUSING PRICES

Household indebtedness is not a direct threat to financial stability. However, indebtedness comprises a vulnerability for macroeconomic developments as it could lead to increased economic instability. Over all, households have a good ability to pay and their assets are greater than their liabilities, while they have substantial savings. But the percentage of households with loan-to-value ratios above 50 per cent has increased in recent years. International experience suggests that highly leveraged households tend to tighten their consumption more sharply in economic shocks such as a fall in house prices, and thus aggravate the effects on the real economy. These households may for various reasons have amortised too little or taken too high risks over a longer period of time and therefore have inadequate resilience. There is thus reason to try to hold down the percentage of households with high loan-to-value ratios, especially in the light of the rapid increase in housing prices.

A number of indications suggest that the growth in debt may slow, as households' willingness and capacity to take on larger loans may become more subdued. These indications are gradually rising interest rates, the current discussion on amortisation requirements and the fact that more households are being limited by the so-called discretionary income calculations as loan volumes have risen. There are also some structural factors that may contribute to stabilising the development of debt. For instance, the number of conversions of rental properties to tenant-owned will not remain at the same high level as before. FI has made a scenario analysis of household debt and house prices based on the National Institute of Economic Research's (NIER) forecasts for GDP, disposable incomes and interest rates. In this scenario, debts grow faster than incomes in 2016 and 2017 and the debt-to-income ratio rises. Debts are then expected to grow more slowly and at the end of 2017 they will be growing in line with incomes. Rising house prices and low interest rates can push up credit growth even further, which can increase vulnerability. FI has therefore examined another scenario, in which house prices continue to rise rapidly. Debts then grow faster than in the first scenario and the debt-to-income ratio is higher and also continues to rise after 2017. As always, the scenarios are very uncertain, and FI is closely following developments in household debt.

IT IS IMPORTANT THAT FI HAS THE POWERS OF AUTHORITY TO CARRY OUT ITS NEW ASSIGNMENT

In March 2015, FI presented a proposal aimed at lowering the risks linked to highly-leveraged households, involving amortising loans down to a loan-to-value ratio of 50 per cent. An amortisation requirement increases households' scope for action in the long run in the case of shocks and thus reduces the risk of fluctuations in economic activity being reinforced because vulnerable households reduce their consumption. As a result of lack of clarity regarding FI's power of authority to introduce an amortisation requirement, however, FI chose not to intro-

duce it yet. During the autumn, the Government has presented a proposal as to how FI shall introduce an amortisation requirement. This means that the requirement can be in force in summer 2016, which will probably contribute to a calmer development on the housing market and dampen growth in indebtedness.

FI works continuously on evaluating the measures taken and the need for further measures. If developments in household indebtedness lead to further risks building up, a need to take further measures may arise. For example, FI has taken up the question of regulating the size of loans in relation to households' incomes if the risks linked to household debt continue rising. However, FI does not have the powers of authority to introduce such a requirement to counteract the macroeconomic risks linked to household indebtedness. If housing prices and debts continue to increase rapidly, we may find ourselves in a serious situation. It would be unfortunate if we then had to await new legislation before we can act. It is therefore important that the question of FI's powers of authority does not stop with the right to introduce an amortisation requirement. FI's possibilities to take measures with regard to the broader task of counteracting financial imbalances with the aim of stabilising the credit market should be made clearer.

The economic situation

International growth is currently modest, but far from robust. At the same time, it is less likely now that economic developments in Europe will deteriorate substantially than it was six months ago. There is also still the risk of a sharp adjustment in the prices of higher-risk assets, although the probability of this is considered somewhat lower than it was six months ago. FI assesses that the risk of a fall in Swedish housing prices has increased since June. On the whole, these risks are still considered to be a potential threat to economic and financial stability in Sweden.

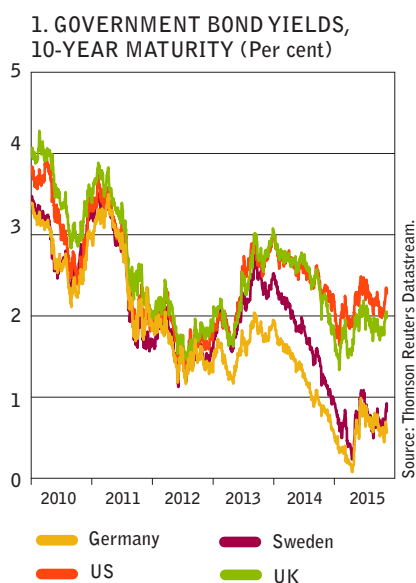
Economic developments in Sweden and abroad are important for stability in the Swedish financial system and economy. The profitability of the financial sector is affected by economic developments in Sweden, which are to a large degree linked to economic developments abroad. For instance, the banks' financial and economic conditions usually improve during economic booms, partly because the demand for loans increases. But a boom may also hasten the build-up of imbalances on the credit market, as non-financial firms and households are more likely to invest and consume when times are good. The risk of exaggerated credit-granting increases during these periods, which can lead to imbalances building up. When such an imbalance is corrected further ahead, it may entail major costs for the economy as a whole. A recession, on the other hand, may lead to loan losses in the banking sectors, which can in turn mean that confidence in Swedish banks deteriorates. This can mean that it becomes more difficult for the banks to manage their day-to-day financing on the financial markets.

Sudden and unexpected changes in economic developments may give rise to what are known as shocks, which could give rise to financial instability when combined with vulnerability in the financial system. Examples of shocks include a severe economic downturn in Europe or a large international bank suffering problems, or in the worst case even going bankrupt (see the box Finansinspektionen's vulnerability indicators).

ECONOMIC STRENGTHENING ABROAD

Global growth remains moderate with uneven prospects. Growth in the developed economies has improved somewhat over the past six months. The economic outlook for emerging markets and developing economies looks poorer, however, primarily due to weaker expected development in the large emerging markets and oil-exporting countries. Both nominal and real interest rates in the world economy are historically low and in some cases even negative (Chart 1). Moreover, interest rates are expected to remain at low levels for a long time to come.

The weak recovery that started in the euro area is expected to continue, but at a somewhat weaker pace than before.¹ Macroeconomic conditions look cautiously better as a result of higher domestic and international demand, although growth is still weak (Chart 2).² The OECD assesses



1 ECB Staff macroeconomic projections for the euro area, September 2015, ECB.

2 According to the ECB, international demand has been helped by the weak euro exchange rate, while domestic consumption has benefited from further easing of financial terms and conditions, increases in real wages and lower energy prices. Financial Stability Review, May 2015, ECB.

that growth will amount to just over 1.9 per cent in 2016.³ Inflation is still very low.⁴

The recovery in the United States is continuing, albeit more slowly than previously assessed (Chart 2). Growth is expected to amount to 2.4 per cent in 2015 and 2.6 per cent in 2016. The Federal Reserve's decision to hold its policy rate unchanged in October resulted in only temporary market fluctuations. The Fed is expected to raise its policy rate at the end of 2015.⁵

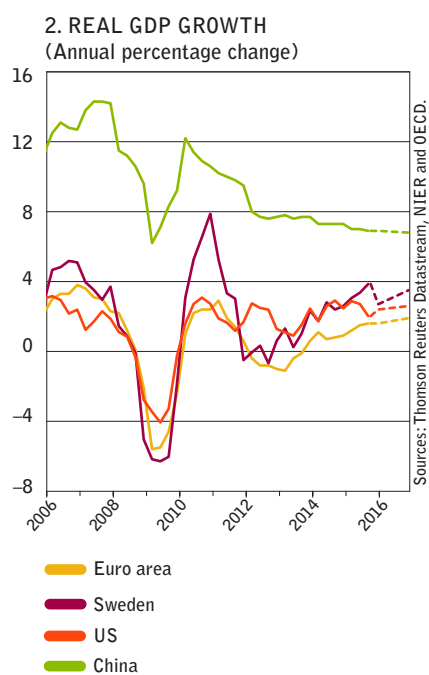
The slowdown in emerging markets has a dampening effect on global growth. Structural problems and reduced capital flows, combined with increased volatility in the financial markets have worsened the situation for emerging markets and developing economies.⁶ With regard to China, however, the slowdown may be partly due to a development towards a more balanced and sustainable growth (Chart 2).⁷

The Swedish economy has continued to develop strongly over the past six months and according to the National Institute of Economic Research (NIER), GDP in Sweden will grow by around three per cent a year in 2016 and 2017.⁸ It is mainly an increase in exports to the somewhat stronger euro area, with support from the weak krona exchange rate, that is expected to contribute to the strong growth in Sweden (Chart 2). At the same time, domestic demand will remain important to the Swedish economy. Inflation is expected to remain low, although cautious tendencies towards a rise have been observed over the past six months.⁹

SOME TURBULENCE ON THE FINANCIAL MARKETS

The financial markets have occasionally been turbulent during the autumn, and sensitivity to disruptions has been relatively high. Several uncertainty factors have contributed to increasing the financial stress level at times. Expectations of rising interest rates in the United States that have not been realised, as well as some signs of a decline in access to market liquidity and less robust liquidity on some markets, have all contributed to the uncertainty.¹⁰ However, FI does not see any clear signs that market liquidity in the Swedish bond market is worryingly low (see the box Liquidity in the covered bonds market in the chapter Interlinking and contagion).

The low interest rates have over a long period of time driven investors to buy riskier assets in the hunt for higher yield. The interest rate differenti-



Note. Dashed lines are forecasts. The forecast for Sweden is from NIER in August and the forecast for the euro area, US and China are from the OECD in October.

3 Economic Outlook, October 2015, OECD.

4 European Economics Weekly, October 2015, Capital Economics.

5 The US central bank, Federal Reserve, has had a policy rate of 0-0.25 per cent since December 2008.

6 World Economic Outlook, October 2015, IMF.

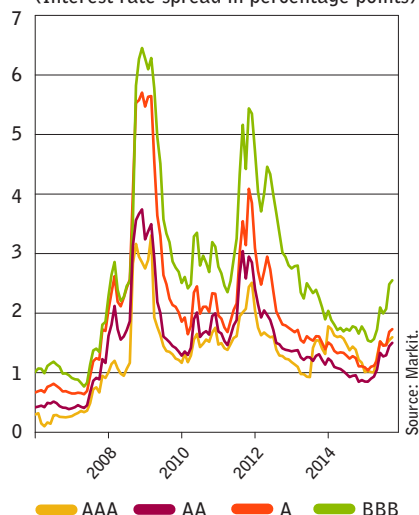
7 For some years now, the Chinese government has notified that it wishes to see a change in the balance, with household consumption accounting for a larger share of demand. This change in balance will have affect Chinese imports and global trade flows and have different effects on the countries that trade with China. The Swedish Economy, December 2013, NIER.

8 The Swedish Economy, August 2015, NIER.

9 The weakening of the krona over the past year, together with a gradual rise in resource utilisation, is one reason why inflation has bottomed out and may be starting to rise. The Swedish Economy, August 2015, NIER.

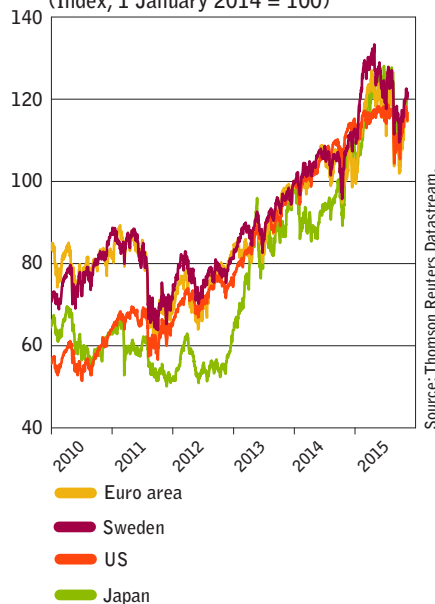
10 Market Liquidity – resilient or fleeting, October 2015, IMF.

3. CORPORATE BOND YIELDS FOR EUROPEAN COMPANIES (Interest rate spread in percentage points)



Note. Refers to the spread between interest rates on creditrating-grouped baskets of European corporate bonds and on German 5-year government bonds.

4. STOCK MARKET DEVELOPMENT (Index, 1 January 2014 = 100)



als between risky and safe assets have thus declined significantly in recent years. However, this development appears to have turned around over the past six months, as interest rate differentials between corporate bonds with different credit ratings have increased (Chart 3). However, these differentials are still low in an historical perspective. Global stock market indexes have fallen after rising sharply over a long period of time (Chart 4). This can be interpreted to mean that investors wish to redistribute their asset portfolios to reduce risk taking, which is probably one of the reasons why volatility on the financial markets has increased during the autumn (Chart 5).

FI's vulnerability indicators

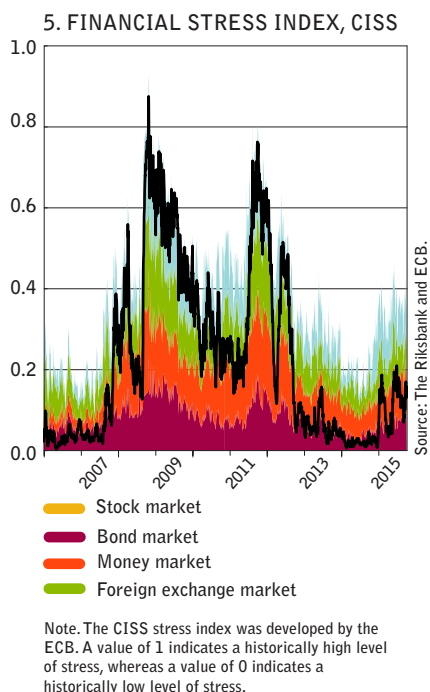
The financial system has a number of inherent vulnerabilities. Examples of vulnerabilities include the banks' dependence on day-to-day funding and that the financial system in Sweden is large and interlinked. These vulnerabilities in themselves need not entail a threat to financial stability, but together with a shock they could lead to financial and economic instability. Examples of shocks include an unexpected economic downturn in the euro area or a large international bank suffering problems, or perhaps even going bankrupt. Shocks are difficult to predict, as they often occur suddenly and can be triggered by very many possible events. They are therefore also very difficult to monitor and predict. Moreover, FI seldom has the opportunity to prevent or alleviate either the shock itself or its scope. On the other hand, it is possible to follow the build-up of vulnerabilities, which usually takes place over a longer period of time. Unlike shocks, it is usually also easier for FI and other authorities to take measures to deal with vulnerabilities. FI therefore aims mainly to identify and reduce the vulnerabilities in the financial system.

FI regularly monitors vulnerabilities in the financial system. To summarise the information from the vulnerabilities, FI has developed a number of vulnerability indicators.¹¹ These vulnerability indicators are compiled into a heat map (Figure B1). The heat map is a method of summarising and illustrating the vulnerability indicators and is part of the base for assessing the resilience of the financial system. However, it is important to point out that the purpose of the heat map is to provide an overview of what a selection of FI's vulnerability indicators currently show. A more detailed description of FI's indicators is given in Finansinspektionen's vulnerability indicators (FI, 2015).

The vulnerability indicators are grouped into the heat map according to sector and vulnerability category. At present, the indicators cover the banking and household sectors, but more sectors will be added as the heat map is extended. The vulnerability categories are liquidity, solvency and exposures. Liquidity refers to how much operating capital, in the form of cash and easily-accessible capital, households or banks hold. Solvency measures the size of the capital buffers the respective sectors can use to deal with unexpected losses. Exposures measures the build-up of risk in the assets owned by the sector studied and their degree of concentration. With regard to the household sector, the main vulnerabilities are related to home-ownership.

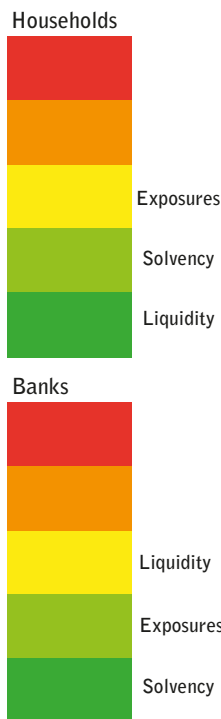
Thresholds are assessed or estimated for each indicator as to when it shall give different colour signals – a green signal for low vulnerability, a yellow signal for raised vulnerability and a red signal for high vulnerability. When a cell in the heat map includes several indicators, the signals from the

11 For further information on FI's work on vulnerability indicators, see FI-analysis no. 2 2015. The vulnerability indicators are a work in progress. The set of indicators included in the heat map may change over time – some indicators may be added and others may lose significance.



individual indicators are combined into a summarising colour (Figure 1). For instance, the combination of a red (high vulnerability) and yellow indicator (raised vulnerability) gives an orange cell.

**FIGURE 1.
VULNERABILITY
IN BANKING AND
HOUSEHOLD SECTORS**



All in all, both the banking and household indicators show that the vulnerabilities in the respective sectors are low to raised at present, see Figure B1. Finansinspektionen's vulnerability indicators (FI, 2015) describe signals from the individual indicators.

The banking sector's solvency indicators show low vulnerability, which is due to high observed capital buffers, both in relation to FI's requirements and in absolute terms. The indicators for the liquidity and exposures categories point to raised vulnerability. In the case of liquidity, this is linked to access to stable funding being somewhat lower than their requirements; that is, the bank's NSFR ratios are below 1.¹² The fact that the exposures indicators also signal raised vulnerability is due to Sweden having a concentrated banking system – that is, the system is dominated by a few large banks that are also very closely interlinked.

Household liquidity indicators currently show low vulnerability. This is because households' interest-to-income ratio, that is, interest costs in relation to household incomes, is very low (see the chapter *Indebtedness and the Swedish economy*).

The solvency indicators – assets in relation to debt burden and households' loan-to-value ratio – also show a good resilience. There are households that are highly mortgaged, but this is weighed up by the fact that there are households with no loans at all. In total, this leads to the aggregate loan-to-value ratio not being especially high. Credit growth and the rapid increase in housing prices point to raised vulnerability in the exposures category.

A systematic review and presentation of indicators gives a starting point for analysing the vulnerabilities of the financial system. At present, the indicators show low to raised vulnerability. However, the heat map should be interpreted with caution and its primary purpose is to provide an overview of the most relevant vulnerabilities in the financial system. In the cases where the indicators signal raised or high vulnerability, there is reason for FI to investigate more closely. The indicator signal could be due to events that are not linked to raised vulnerability. A quantitative signal of raised vulnerability thus does not always require a deeper analysis.

12 NSFR stands for Net Stable Funding Ratio. There is at present no legal requirement regarding NSFR. For further discussion, see the section *Stable net funding limits risks in the longer run* in the chapter *The banks' financing and liquidity risks*.

DISRUPTIONS THAT COULD THREATEN FINANCIAL AND ECONOMIC STABILITY

The size and concentration of the banking sector, and the banks' dependence of short-term market funding, entail vulnerabilities for economic and financial stability. When combined with certain type of shock, these vulnerabilities can lead to problems that affect financial stability. At present there are a number of increased risks that could trigger shocks if they were to materialise and thus cause financial and economic instability.

A rapid and sharp rise in risk premiums

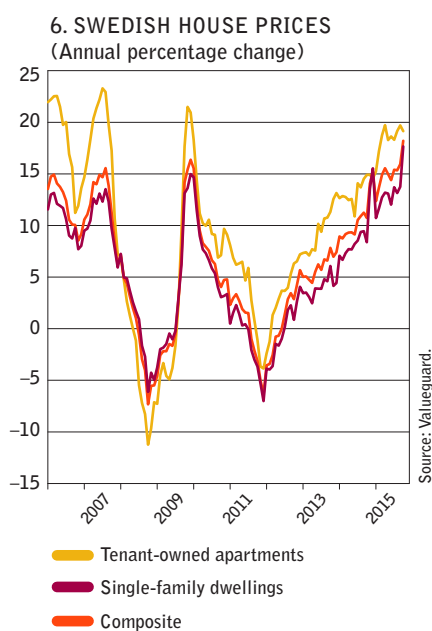
The prolonged period with low interest rates has meant that interest in investing in risky assets has increased substantially in recent years. Risk premiums have therefore fallen to historically low levels.¹³ Although risk premiums have normalised to some extent the past six months (see Chart 3), there is still a risk of a large and sudden rise in premiums. This is because risk taking is still high in an historical perspective. A shift in investors' expectations and in the pricing of risk could create a rapid rise in risk premiums.

Swedish banks are dependent on being able to obtain day-to-day funding on the financial markets and are therefore vulnerable to disruptions on the markets where they obtain funding (see the chapter The banks' financing and liquidity risks). A rapid and substantial rise in risk premiums is one example of such a shock that can create turbulence on the financial markets and thus increase funding costs, and in the worst case strangle market funding for Swedish banks. In addition to creating serious problems, this can ultimately lead to Swedish households and companies failing to gain access to credit, which would have serious consequences for the economy as a whole.

A fall in housing prices could bring down household consumption

Swedish households have high debts in relation to their total incomes. Households' good ability to pay and the fact that their assets are larger than their debts implies that household indebtedness does not comprise a direct threat, but rather an indirect threat to financial stability (see the chapter Indebtedness and the Swedish economy). Housing prices in Sweden are rising rapidly (Chart 6) and although there is no clear answer as to whether Swedish homes are overvalued, FI assesses that the risk of a fall in housing prices has increased over the past six months (see the section Housing prices continue to rise rapidly in the chapter Indebtedness and the Swedish economy).

When price falls occur, they tend to be large as households reduce their expectations of future developments in prices. For households that own their own homes, a fall in prices leads to a decline in wealth and in expectations of future wealth. A fall in prices can thus mean that households reduce their consumption, which then leads to an economic downturn. This decline can be reinforced by the fact that many Swedish households are highly mortgaged. These households tend to restrict their consumption more during shocks, such as a fall in housing prices. A heavy fall in prices could in a worst case scenario influence confidence in Swedish banks and deter their access to market funding.



13 Stability in the financial system, June 2015, FI.

Poorer economic situation in the euro area

Developments in the euro area are far from robust and there are still many uncertainty factors. The risk of a severe worsening of the economic situation in the euro area has declined over the past six months, but still remains. The boost to the economy from last year's weak exchange rate and low oil prices will probably wane in the coming period. This will also have a negative effect on inflation. Low inflation can entail problems for both developments in the real economy and for financial and economic stability. For instance, deflation can cause real debts to rise in society, which makes it more difficult to reduce the debts.¹⁴ A need to reduce debt may arise, for instance, when housing prices fall or during an unexpected decline in economic activity. This would mean that the banks' financing conditions could be affected by disruptions on the European financial markets.

14 If the inflation rate is below expected inflation, the general public's debt burden in relation to general prices rises - real debts rise. This can be distressing for households, companies and states, particularly if their debt burden is high.

Interlinking and contagion

Interlinking is a necessary condition for the financial system to function, but also means that problems can spread between different agents and it is therefore a vulnerability. Swedish banks issue bonds owned by other agents in the financial system, which increases the interlinking. The agents in the financial system are also interlinked through the securities markets. Some securities markets are systemically important, and if they cease to function then problems can spread throughout the financial system.

The Swedish financial system is large and closely interlinked. The four systemically-important major banks are at its core. The major banks have similar business models (see the chapter The banks' operations and capital) and are also interlinked. At the same time, the banks also have international links, partly through their market financing in foreign currency (see the chapter The banks' financing and liquidity risks). There are also securities markets that can be regarded as systemically important because of their important role with respect to companies' need for day-to-day financing and risk management. The insurance companies are interlinked with both banks and securities markets and affect financial stability, but are not regarded as systemically important in the current situation.

INTERLINKING CAN LEAD TO CONTAGION

The interlinking is necessary for the financial system to execute its fundamental functions. A common infrastructure is needed to be able to make payments. Transactions lead to agreements that bind the parties and make them dependent on one another. Pricing in the securities markets affects the valuation of assets and liabilities in the entire financial system and affects decisions on saving and financing.

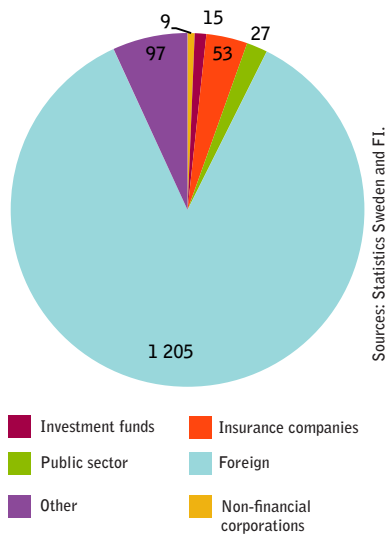
The interlinking means that risks and capital can be allocated efficiently, but the interlinking that arises also comprises a contagion channel for financial instability. If one company suffers problems, they can spread to other companies. The interlinking is therefore a vulnerability in the Swedish financial system. So-called direct exposures are the type of interlinking that is most evident and they arise through ownership of securities and contracts between different companies. One example of such exposures is the major banks' cross-ownership of one another's securities that comprises part of the banks' liquidity buffer (see the chapter The banks' financing and liquidity risks).

THE BANKS' BONDS LINK THEM TOGETHER

An owner of a security is affected by how things go for the company that has issued the security. Both shareholders and bondholders risk losing money if the company goes bankrupt. The banks issues bonds owned by other participants in the financial system, which means that they are exposed to developments in the banks.

Bonds account for the largest amounts of the securities issued by the major Swedish banks. In total, Swedish banks have issued bonds to a value of SEK 3,500 billion (see the chapter The banks' financing and

7. OWNERS OF THE BANKS' UNSECURED BONDS
(Q2 2015, billion SEK)



Sources: Statistics Sweden and FI.

Note. Refers to the market value of the banks' total stock of bonds other than covered bonds in SEK. Bonds issued in other currencies have been converted to SEK.

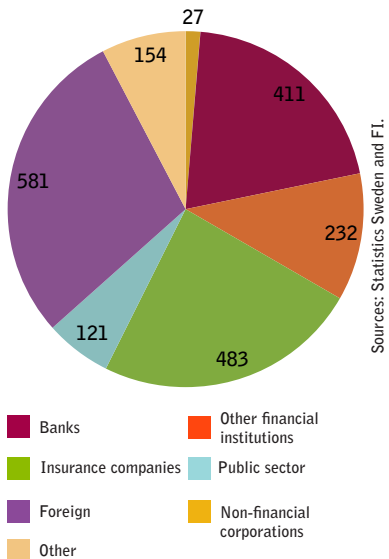
liquidity risks).¹⁵ The banks issue two types of bonds with different risk profiles, what are known as covered and unsecured bonds. The different types of bond are aimed at different categories of investor. To assess the degree of vulnerability caused by the interlinking in the Swedish financial system, it is very important whether the bonds are owned by Swedish or foreign investors.

Unsecured bonds have a higher credit risk than covered bonds. They are almost exclusively issued in foreign currency and aimed at investors abroad. The distribution by different investor categories for unsecured bonds is shown in Chart 7.

The owners of the covered bonds have priority on collateral in the form of mortgages if the bank were to fail. This means that the covered bonds have lower credit risk than the unsecured bonds. Covered bonds are an asset characterised by very low credit risk and good liquidity. Although foreign investors are large owners of covered bonds, the majority are held by Swedish institutions. The two largest investor categories are other Swedish banks and insurance undertakings. These categories are the most important from the perspective of interlinking and contagion (Chart 8).

Chart 7 show that unsecured bonds comprise a limited contagion risk for the Swedish financial system. Although the outstanding stock is large and these bonds have a higher credit risk than the covered ones, the large share of foreign ownership means that the contagion risks, from banks to other parts of the Swedish financial system, is small. The unsecured bonds mainly link together the Swedish banks with foreign ones. This type of interlinking is important in the context of financing and liquidity risks, which is discussed in detail in the chapter The banks' financing and liquidity.

8. OWNERS OF COVERED BONDS
(billion SEK, Q2 2015)



Sources: Statistics Sweden and FI.

Note. Refers to the market value of the mortgage institutions total stock of covered bonds in SEK. Bonds issued in other currencies have been converted to SEK.

The fact that the banks own one another's covered bonds increases the interlinking in the financial system. Apart from these direct exposures, the banks are interlinked in that they operate on the same market and have similar exposures and business models. If international parties perceive that one of the major Swedish banks is suffering serious problems, there is a risk that many participants may then conclude that all four major Swedish banks have similar problems.

INSURANCE UNDERTAKINGS FINANCE THE BANKS

The insurance undertakings' large holdings of the banks' covered bonds mean they are linked to the banking system. Problems in the banking system can spread to the insurance sector through these direct exposures. If the insurance undertakings no longer wish to, or can, finance the banks, then problems can spread in the opposite direction, from the insurance to the banking sector. However, FI does not assess such a scenario to be probable at present.

Nevertheless, the insurance undertakings have been proved to affect financial stability in other ways, for instance, by affecting the dynamics in the securities markets during periods of financial stress. Seen in an historical perspective, it is mainly the life insurance companies with long-term commitments that have in some cases reinforced the fall in share prices and interest rates. When share prices and interest rates fall, the life insurance companies may need to sell shares and buy bonds.

¹⁵ Refers to Swedish banks' and their mortgage institutions' outstanding bonds at market value.

The historically-low interest rates raise questions regarding the life insurance companies' capacity to meet their commitments. FI has recently carried out a survey of the largest life insurance companies, which shows that the assets are sufficient for a long-term low interest scenario, but that problems would arise if this was combined with a fall in asset prices. It is important that the companies manage these risks.

SYSTEMICALLY IMPORTANT MARKETS

Some financial markets must function for the financial system to manage its central tasks. These markets are referred to by FI as systemically important. FI assesses that it is mainly fixed-income and foreign exchange markets that are systemically important, as it is these markets the financial companies use for their day-to-day financing and risk management. If these markets cease to function, companies will not be able to manage their payments or hedge against risks such as foreign exchange risks.

A functioning market mainly means that the market is open for trading. It is also important to have good market liquidity, that is, that one can buy or sell large items without affecting the price too much. When market liquidity on the systemically-important markets is good, then shocks such as large price changes in individual securities or large flows can be absorbed or at least dampened. When market liquidity is poor, this can lead to increased price volatility and to shocks being reinforced and spreading throughout the financial system.

Trade in the systemically-important fixed-income and foreign exchange markets is through what are known as market makers. The market makers enable other participants to immediately buy or sell financial instruments, without having to wait for someone with a corresponding interest to appear. As the market makers function as counterparties to all those trading on the market, they play a key role. Their capacity to manage order flows is of central importance to the liquidity of these markets. The way they manage the costs of holding stocks¹⁶ and their capacity and incentives to bear the risks the stocks entail also affect the liquidity on these markets.

Since the financial crisis, new regulations that affect market makers have been introduced. Critics say that the regulations have worsened the market makers' ability to manage order flows and hold stocks and that this in turn has had a negative effect on market liquidity. At present, however, FI's assessment is that liquidity on the covered bonds market has not deteriorated in recent years (see the box Market liquidity for covered bonds).

Market liquidity is dependent on the conditions in general. Under favourable conditions, liquidity is good while it is poorer in times of financial stress. The changes made in regulations have been made under relatively good market conditions. This makes it difficult to comment on the liquidity effects of the new regulations on market liquidity in a stressed situation. It may be so that there are other factors that have compensated for

16 For a market maker to be able to meet a buyer's need for a special security, the market maker needs to hold a stock of what may be expected to be in demand from the customers. Holding stocks entails both a financing cost and a capital requirement to be able to bear the risk of fluctuations in the value of the stocks.

the impact of the regulations and are hiding underlying problems with market liquidity, see the box Market liquidity for covered bonds for an explanation.

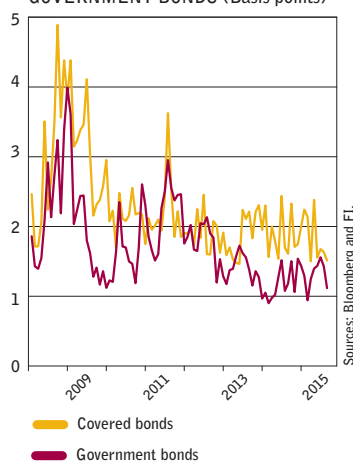
During the autumn, the Riksbank has provided proposals for amending the provisions for pledging collateral to gain access to loans in the Riksbank under normal circumstances. FI, together with the Swedish National Debt Office, has pointed out in a consultation response that the proposal may have undesired effects for systemically-important markets¹⁷. In particular, the risk that the system could become less resilient to disruptions in the liquidity supply is highlighted.

Market liquidity for covered bonds

The fixed-income market is important to the financial system. The covered bonds market is of central importance for the banks' financing. FI has therefore studied market liquidity on the secondary market for covered bonds. Our results do not indicate that liquidity has deteriorated in recent years. The chosen measure, yield impact, reflects the change in market rates that can be observed between two transactions with a bond carried out on the same day.

The requirements that banks should keep more capital and liquidity for their operations have been tightened since the financial crisis. In theory, this affects the banks' conditions to act as market makers and support market liquidity. Financing liquidity for a market maker is affected by how much capital it must hold for its positions in the trading book¹⁸ and the possibilities to finance the remainder using short-term loans. Financing liquidity means that market liquidity in various assets becomes interlinked. Interlinking can also arise for other reasons. Our results point to a high correlation between market liquidity in covered bonds and government bonds.

9. AVERAGE TRANSACTION COST ON COVERED BONDS AND GOVERNMENT BONDS (Basis points)



Note. The chart shows the average transaction cost per month for the Swedish covered bonds and government bonds market. The transaction cost is measured as yield impact, which put simply is the impact that a transaction has on the market rate.

Sources: Bloomberg and FI.

Our results indicate that the transaction cost expressed as yield impact in covered bonds has been around 2 basis points in recent years (Chart 9). For government bonds it has been around 1.3 basis points (Chart 9). The fact that it has remained constant for several years, despite the increasing legal requirements on the banks' capital and liquidity could be due to liquidity not having deteriorated, which is probably due to the Riksbank's increasingly expansionary monetary policy. When monetary policy normalises, this will probably lead to a deterioration in market liquidity.

Turnover in relation to outstanding volume of covered bonds has fallen since the financial crisis. This has been in line with the falling interest rates. Low interest rates probably mean that some turnover disappears as risk-adjusted yield becomes too low. Given the relatively constant

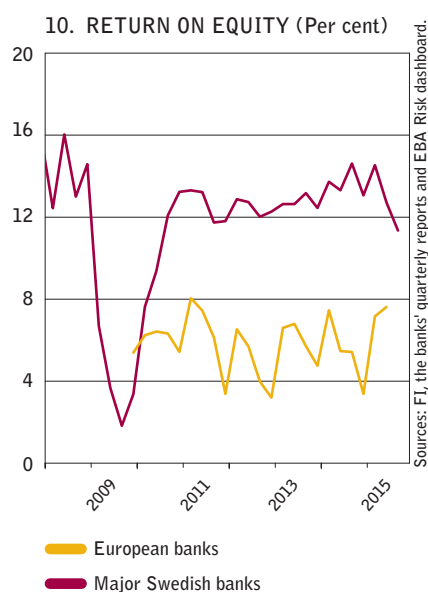
¹⁷ Consultation response to Proposal for amended terms and conditions for collateral for credit at the Riksbank
FI Ref. 2015-00700.

¹⁸ See Footnote 16.

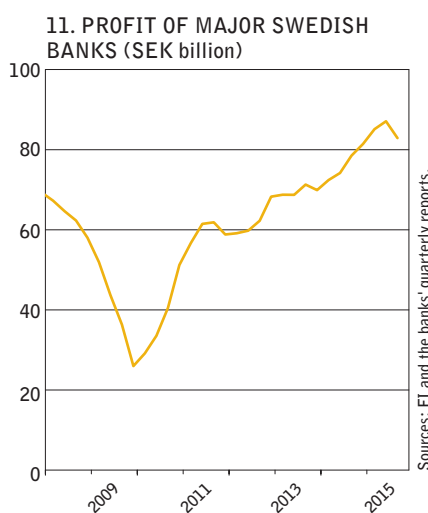
transaction costs we observe, lower market rates will mean that costs as a percentage of expected yield rise substantially. It is probable that this has led to investors refraining from doing business.

The banks' operations and capital

Swedish banks still have a satisfactory resilience. Their capacity to bear loan losses is good and their earnings are stable, despite low interest rates. On a global level there is a discussion on new international regulations that could mean that the capital adequacy requirements no longer reflect the risks in the Swedish banks' assets. This can lead to the banks choosing to move financial operations outside of the banking system and FI's supervision.



Note. Unweighted average for the major Swedish banks and median for 55 European banks.



Note. Refers to the major banks' profits after tax totalled over four quarters, before dividends.

The banks comprise a central part of the Swedish financial system. If the banks are to supply the economy with loans and other financial services, they must have a long-term sustainable business model that entails good and stable earning and they must be well-capitalised. It is also important that the banks have good governance, risk management and control. It is fundamental to financial stability that the banks are able to play this role even during times of crisis.

The Swedish banks differ both with regard to the scope of their balance sheets and their operations and complexity. FI assesses that the four largest banks, Handelsbanken, Nordea, SEB and Swedbank, are systemically important. If these banks suffer problems, they may quickly and powerfully spread to other participants in the financial markets. This can in turn threaten financial stability both in Sweden and our neighbouring countries (see the chapter Interlinking and contagion). Moreover, the systemically-important banks may be difficult to replace, because of their size, if they were to suddenly cease operations. To promote stability, FI therefore puts particular emphasis on the supervision of the four major banks. FI also requires that these banks hold a higher percentage of capital and have liquidity buffers comprised of high-quality assets.

SWEDISH BANKS HAVE STABLE EARNINGS

Profitability in the Swedish banking sector is still high (Chart 10). The major banks' return on equity amounted on average to around 12 per cent in the third quarter of 2015, which is high in relation to the European banks.

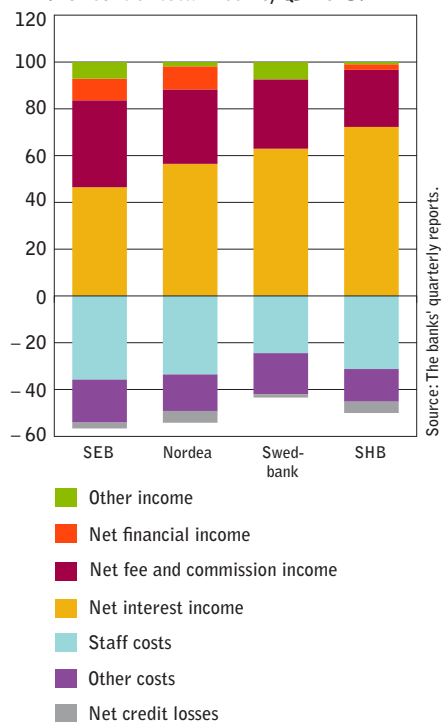
Over the past year, the four major banks have generated a total profit of more than SEK 80 billion (Chart 11).¹⁹ The major banks' earnings consist mainly of net interest income and net commission income (Chart 12), which accounted for around 60 per cent and 30 per cent respectively of the earnings in the third quarter of 2015.²⁰ The banks' net interest income is the difference between their interest income and interest expense, and is governed both by volumes and the margins the banks have in their borrowing and lending. Net commission income is the difference between income and expense from fee-based services, such as advisory, trade and management.

The credit losses of the major banks have been at a low, stable level since 2010 (Chart 13). Low interest rates and rising income in recent years have increased the borrowers' ability to pay (see the chapter Indebtedness and the Swedish economy). This, together with a reduced exposure to markets with relatively higher losses, such as the Baltic, has contribu-

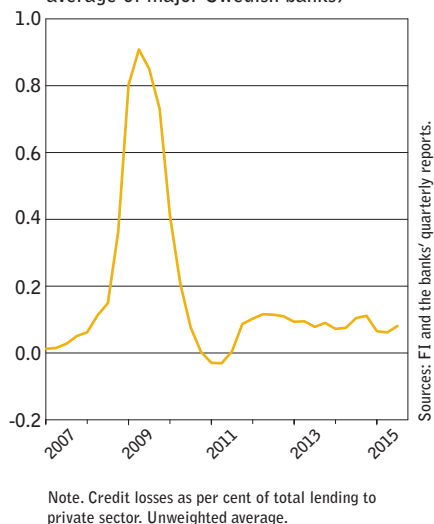
¹⁹ The banks' quarterly reports.

²⁰ Ibid.

12. THE MAJOR SWEDISH BANKS INCOME STATEMENT (Per cent of total income, Q3 2015)



13. CREDIT LOSSES (Per cent, average of major Swedish banks)



ted to the low loan losses. The combination of low loan losses and high profitability contributes to the banks still having good resilience.

Stable earnings are a necessary condition for a stable financial system, as they reinforce the banks' resilience to shocks. However, this reasoning is based on profits being retained within the banks to a reasonable degree and not being paid as dividends to shareholders. The earnings contribute to the banks being able to absorb losses using profits instead of capital. If the shocks nevertheless cause loan losses that need to be covered with equity, stable earnings may support the rebuilding of the capital levels.

However, there is a conflict of aims between FI's assignment of promoting stability in the financial system, and at the same time maintaining good consumer protection. While financial stability is of course in the consumers' best interests, there is an unavoidable conflict between the banks' interest in high profitability and the consumers' interest in low lending rates and fees. Overly high earnings are a sign that the banks are strengthening their position at the cost of the consumers and that competition on the consumer market is too low. FI does not intend to define what can be considered a reasonable profit level for the banks, but advocates transparency that can contribute to better competition on the consumer market and a balance between the needs of the companies and the interests of the consumers.

LOW INTEREST RATES IMPACT THE BANKS THROUGH SEVERAL CHANNELS

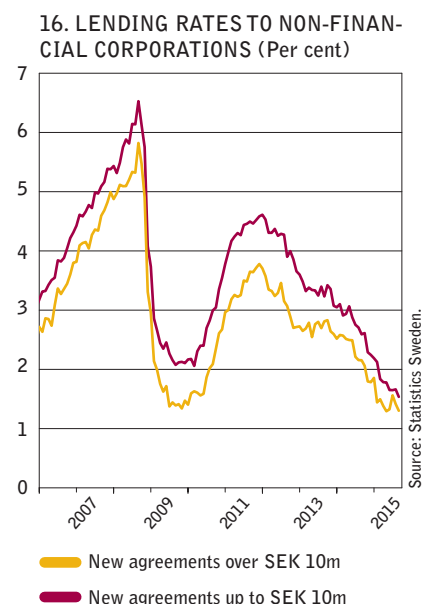
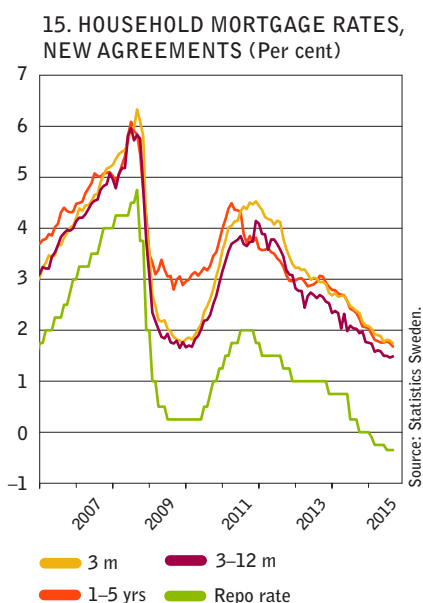
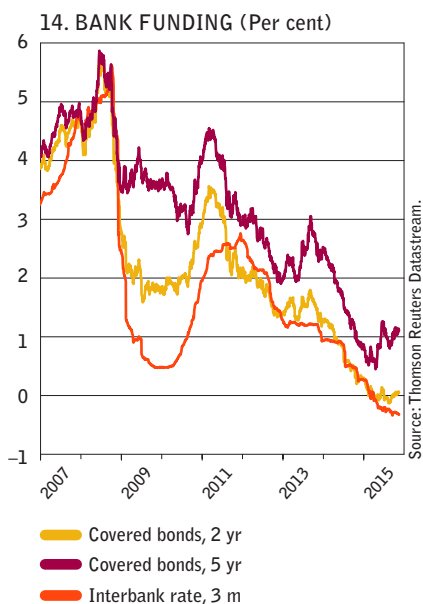
The extended period with low interest rates has consequences for both the banks and their customers. It affects how much the banks and thus their customers receive to invest money and how much they pay to borrow money, which can in turn affect borrowing and lending volumes. The way the banks' earnings are affected by these changes is partly due to changes in volumes and partly to the margins between the banks' and the customers' borrowing and lending respectively.

The low interest rates have meant that the banks' financing costs are now at record-low levels (see Chart 14). The interbank rate and yields on covered bonds, which form the base for much of the banks' financing, have continued to fall on both Swedish and foreign markets over the past six months. This is partly due to falling global interest rates and partly to the Riksbank's repo rate being negative. Lending rates to households and companies have therefore continued to fall over the past six months (Charts 15 and 16). Mortgage rates have continued to fall for all maturities. (Chart 15) and the difference between large and small loans to companies has also declined further over the past six months (Chart 16).²¹ However, interest rates have not fallen to the same extent as financing costs, which has contributed to a rise in the banks' mortgage lending margins.

FI's calculations of the major banks' mortgage margins²² shows that they are currently historically high, which is probably due to several factors (Chart 17). Raised margins have been a part of the banks' strategy to rebuild profitability after the financial crisis. At the same time, the rai-

21 Assuming that large loans are mainly granted to large corporations and small loans are mainly granted to smaller corporations, the interest rate spread between small and large loans provides an indication of the difference in borrowing expenses between small and large corporations.

22 <http://www.fi.se/Tillsyn/Statistik/Bolan/>



sed capital and liquidity requirements in recent year have increased the banks' costs for mortgages. The banks have partly compensated for this by raising their margins. However, FI assesses that the increase in the margins has been greater than these factors can justify, however, which indicates weak competition in the mortgage market.²³

The negative repo rate means that the banks are forced to pay interest to deposit money with the Riksbank or other banks. At the same time, the lending rates to the majority of the banks' customers²⁴ are still zero or even slightly positive, which has pushed down the banks' borrowing margins. The banks' earnings are affected to varying degrees, depending on how much of their funding is comprised of borrowing. Around 35 per cent of the major banks' financing comprises deposits from the general public, while in the case of savings banks, for instance, the percentage is higher.

At an overall level, the low interest rates may also change the banks' business models as they affect the services that contribute to the earnings. For instance, fee-based services, such as advisory or trade, can generate higher income than lending and borrowing, as interest rates are very low. A situation with low interest rates can also entail increased interest in saving in fee-based funds instead of deposits. The net effect with regard to the banks' earnings is thus difficult to assess, as it depends on several factors.

THE BANKS' CAPITAL POSITION CONTINUING TO IMPROVE

The capital adequacy requirements shall ensure that the banks hold sufficient capital to be able to cover unexpected losses and thereby make the banking system more resilient. The requirements made of Swedish banks are currently twice as high as the EU's minimum requirements and the four major banks still meet FI's requirements (Charts 18 and 20). The increase in the banks' capital in relation to risk-weighted assets is largely due to higher capital requirements in recent years.

FI has also introduced requirements regarding capital buffers, which have contributed to the banks having strengthened their capital positions further. For instance, FI activated the countercyclical capital buffer at 1.0 per cent in September 2014 and in June 2015 FI decided to raise the level of the buffer to 1.5 per cent as the cyclical systemic risks, which the buffer is intended to manage, had increased somewhat during the spring.^{25, 26} In particular, there was an increase in risks linked to household indebtedness, which is currently growing faster than both GDP and disposable incomes (see the chapter Indebtedness and the Swedish economy). FI has further assessed that there is also a risk that the absence of an amortisation requirement might contribute to somewhat higher credit growth and house prices.

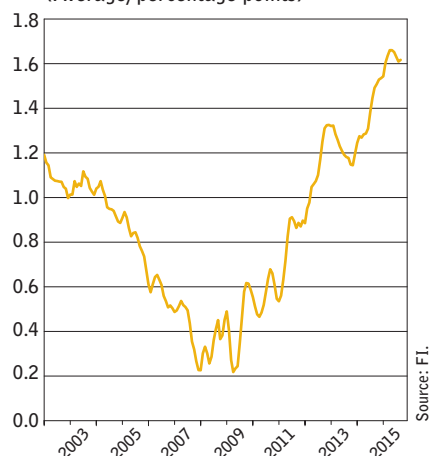
23 To increase transparency and promote competition, FI has introduced requirements that the banks should report their average mortgage rate with effect from the second quarter of 2015. For further information, see http://www.fi.se/upload/30_Regler/10_FFFS/2015/besluts-pm-fffs-2015-1.pdf

24 Some of the larger institutional customers now have to pay negative deposit rates and thus pay to invest their money with the banks.

25 The financial companies covered by the buffer requirement have 12 months after the decision on an increase is taken to meet the requirement.

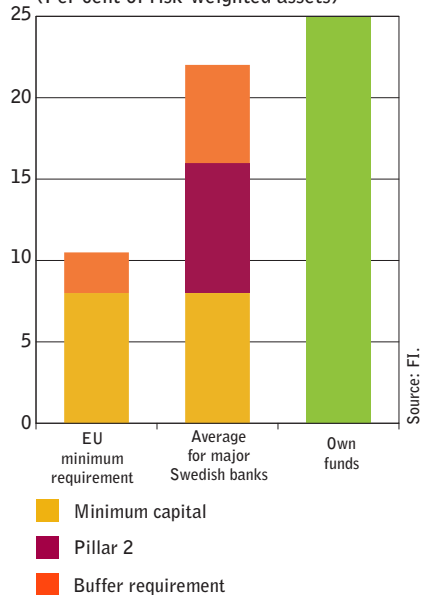
26 http://www.fi.se/upload/30_Regler/10_FFFS/2015/besluts-pm-fffs-2015-5.pdf

17. GROSS MARGIN (Average, percentage points)



Note. Refers to new loans with 3 month maturity.

18. SWEDISH TOTAL CAPITAL REQUIREMENTS (Per cent of risk-weighted assets)



Note. The Pillar 2 requirement includes a risk-weight floor of 25 per cent for Swedish mortgages, capital requirements for Norwegian mortgages, systemic risk in Pillar 2 and other capital requirements in Pillar 2. Other capital requirements within Pillar 2 vary in practice between the different institutions, the chart shows an unweighted average. They chiefly consist of capital requirements for interest rate risk in the pass book, pension risk and concentration risk. Buffer requirements include the systemic risk buffer, the countercyclical capital buffer for Sweden and the capital conservation buffer for Sweden (which is also included in the EU's minimum requirements).

On 25 November this year FI was the first financial supervisory authority in Europe to publish bank-specific Pillar 2 requirements for the 10 largest credit companies and will continue to do this on a quarterly basis. This will increase transparency for assessing risks and capital requirements in the largest credit companies.²⁷

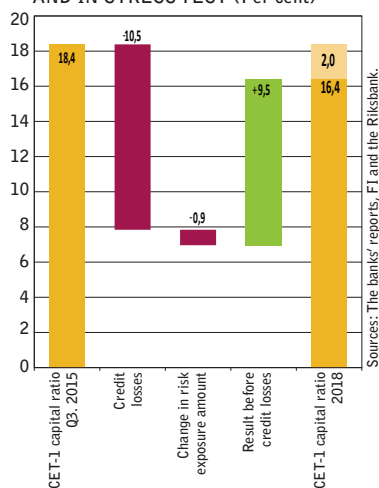
Stress tests together with the Riksbank

FI and the Riksbank have worked together during the autumn to develop scenario-based stress tests. Chart 19 shows the results of one such test for the four major banks during a stress period of three years (2016-2018). In the scenario analysed, the average deterioration in the banks' CET 1 capital ratio is estimated to be almost 2 percentage points. The fact that the banks' capital losses are somewhat higher in this stress test than in the Riksbank's earlier stress tests is probably mainly a consequence of the underlying macroeconomic scenario being somewhat more serious in the joint stress test now being published.

The macroeconomic scenario involves a sequence of events where global financial stress increases, which has consequences for the real economy. In the United States, monetary policy becomes tighter, in that a period of policy rate increases begins, which creates volatility in asset prices and leads to a fall in domestic demand. Global demand also experiences a decline. In Europe, the economic recovery grinds to a halt and the high level of public sector debt prevents further reforms. Globally, spreads on fixed-income markets increase and access to credit and liquidity declines. In Sweden, households, which have been much of the driving force behind economic growth, become more cautious. Household consumption declines and housing prices fall by around

25 per cent due to households' lower expectations and higher financing costs.

19. CET 1 CAPITAL RATIOS ACCORDING TO BASEL III, INITIAL AND IN STRESS TEST (Per cent)

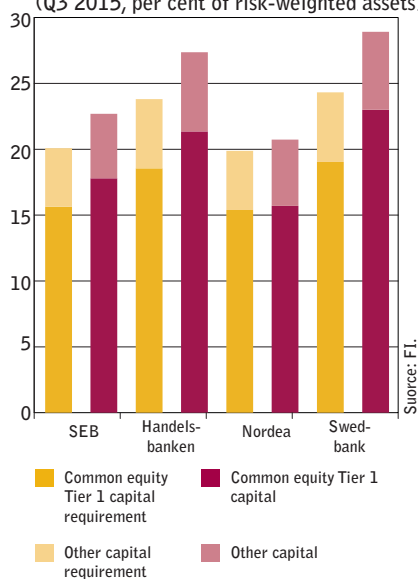


The consequences of the macroeconomic scenario are calculated using data on the correlation between actual loan losses and various macroeconomic explanatory variables since 1991. The method used is based on aggregate loan losses per bank, which are then allocated to individual sectors and regions on the basis of the current allocation of exposures. To compare the effects of the loan losses in the scenario with the banks' capital levels, a number of standardised assumptions have been made regarding the development of the banks' profitability and the risk-weighted exposure amounts.

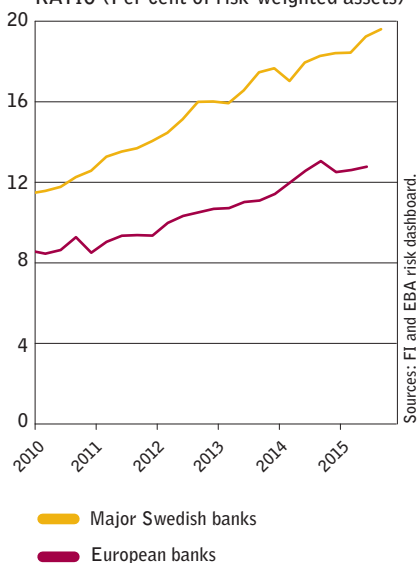
The results that FI reports have no direct link to FI's annual supervisory review of the banks' capital needs, but like other analyses they contribute to increasing knowledge in the work on risk assessments, regulation and supervision. FI's assessment is that it is difficult to draw conclusions regarding the capital requirement in the Swedish banking system on the basis of a single stress test. Ultimately, however,

27 <http://www.fi.se/Folder-EN/Startpage/Supervision/Miscellaneous/Listan/Capital-needs-of-Swedish-banks-as-of-the-third-quarter-2015-/>

20. TOTAL CAPITAL REQUIREMENT FOR THE MAJOR SWEDISH BANKS (Q3 2015, per cent of risk-weighted assets)



21. COMMON EQUITY TIER-1 CAPITAL RATIO (Per cent of risk-weighted assets)



Note. Unweighted average for the major Swedish banks and median for 55 European banks.

repeated scenario-based stress tests can show how the banks' resilience has changed.

During 2016, several different stress tests of the Swedish banking system will be made. Both the IMF and the EBA will analyse the banks' resilience in different stress tests. Moreover, regular stress tests will be made as part of the supervisory work, both internally by the banks and by FI, within the framework of the capital assessment in the ICAAP and SREP processes.

The banks' CET 1 ratios²⁸ have increased markedly in recent years, as a result of increased own equity at the same time as risk-weighted assets have declined (Chart 21). The risk-weighted assets have primarily declined through lower risk weights, as total assets have remained relatively constant in recent years.

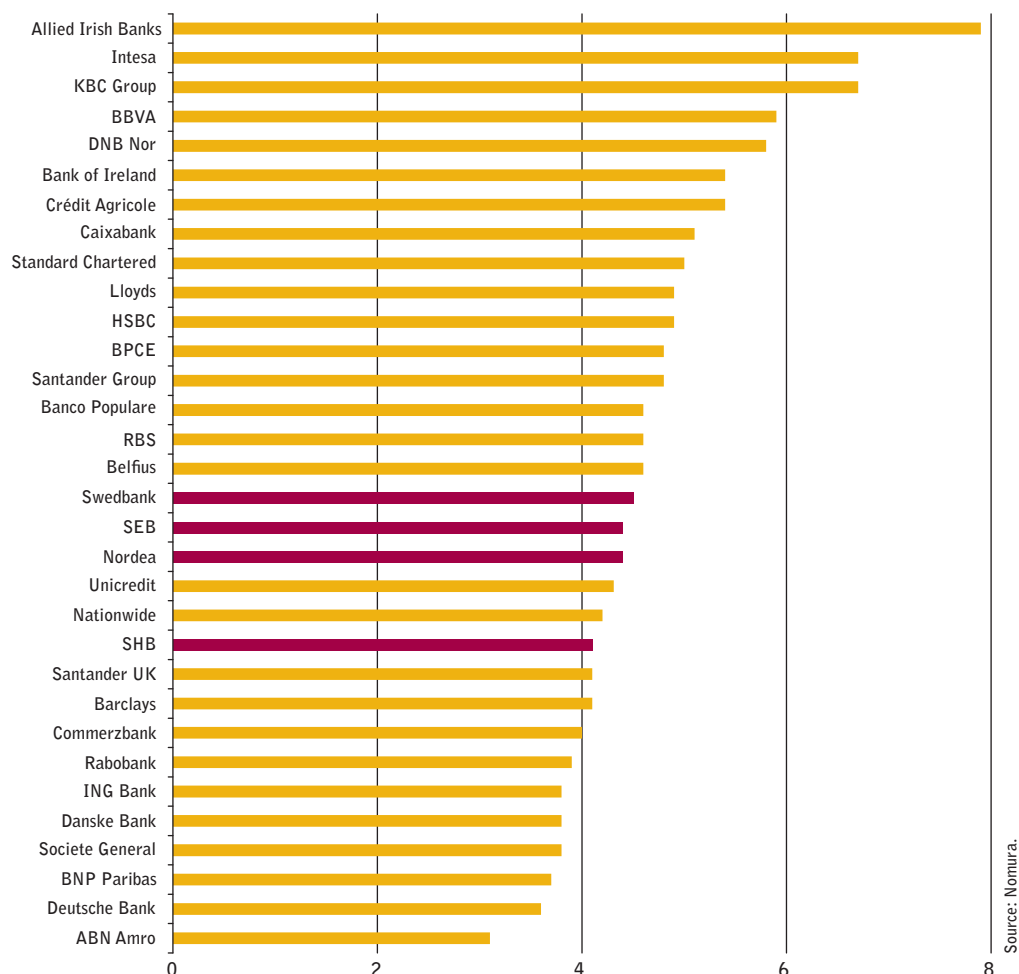
At the beginning of 2008, the four major Swedish banks had almost SEK 290 billion in CET 1 capital. Their total assets then amounted to almost SEK 10,000 billion, so their solvency (CET 1 capital in relation to total assets) was almost 3 per cent. Today the banks have around SEK 525 billion in CET 1 capital, that is, almost twice as much as in 2008. At the same time, their assets have increased to around SEK 14,000 billion. This means that CET 1 capital would have needed to increase by around SEK 130 billion for solvency to remain at 3 per cent. The actual increase in CET 1 capital has been SEK 240 billion, that is, SEK 110 billion more than is required for solvency to remain unchanged at 3 per cent. Solvency has thus risen to 3.7 per cent.

Compared with the other major European banks, leverage ratios in the major Swedish banks, that is, the capital base in relation to the non-risk weighted total exposure amount, is at a somewhat lower level than the European banks' average level (Chart 22).²⁹ At the same time, Swedish banks have a higher capital adequacy ratio, which reflects the fact that the risk in Swedish banks' assets is lower. Loan losses are also low in an international perspective (Chart 23).

28 The banks' CET 1 capital ratio is the relationship between CET 1 capital and risk-weighted assets.

29 If one compares Swedish banks' leverage ratios with European ones and weights the levels according to the size of the banks, Swedish banks are slightly higher in this comparison. This can be seen, for instance, in the Chart below as the banks with the highest leverage ratios in the Chart are the smallest banks in the study.

CHART 22. Leverage ratios European and Swedish banks
(per cent of total assets, Q2 2015)



Note. Refers to fully phased-in leverage ratios as of Q2 2015 according to the banks' interim reports. Crédit Agricole, Belfius, Intesa and ING Bank have not reported fully phased-in leverage ratios and figures for these banks include transition regulations. Nationwide's figures are per Q1 2015 and the figures for Unicredit are taken from an investor presentation from September 2015.

Source: Nomura.

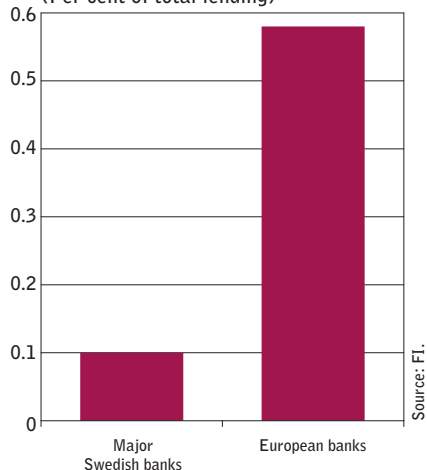
Internal models and risk weights

FI considers that the capital requirements for credit risk shall be risk-sensitive and that the best way to achieve this is to allow the use of internal models, at least in part. If they are well-designed, risk-sensitive capital requirements give a more accurate picture of a bank's capital needs. Moreover, they create strong incentives for healthy risk taking and good control of the measuring, reporting and management of risks in the balance sheet. The disadvantage is that models can be wrong and that the banks will also have strong incentives to utilise the models to push risk weights further down than is justified by the actual level of risk.

The average risk weights for company exposures have declined from around 60 to just over 30 per cent since 2007 (see Chart 24). There are several explanations for this. One is that the banks have begun to use internal models, which normally give lower risk weights. Another is that the banks have become better at taking in and registering collateral and guarantees for the loans granted. The decline in risk weights is also due to the banks having reduced their risk taking, as the regulations give them incentives to lend to counterparts with good credit ratings and high quality collateral.

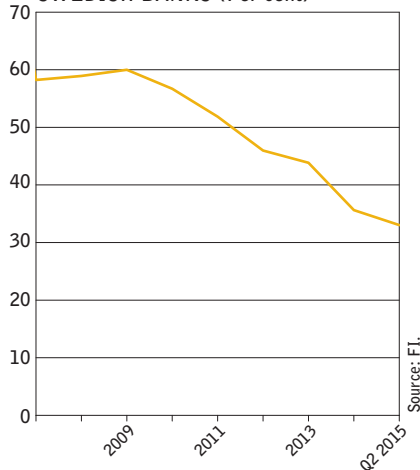
FI therefore assesses that the Swedish banks' increased use of internal

23 CREDIT LOSSES, 2014
(Per cent of total lending)



Source: FI.

24. AVERAGE RISK WEIGHT FOR CORPORATE EXPOSURES, MAJOR SWEDISH BANKS (Per cent)



Note. The outcome for 2015 is the average of the outcome of the first and second quarter.

Source: FI.

models has largely provided a more accurate view of risk in their assets. But there are also problematic elements in the decline in the risk weights. The supervision work shows that the banks have to some extent worked on what is known as risk-weight minimising, which means that they take advantage of the scope for interpretation in the regulations for internal models to minimise the capital requirement.

FI therefore considers that the regulations for internal models should be tightened. A large share of the amendments in the regulatory framework with regard to internal models that FI advocates will need to be achieved through international agreements and European legislation. The Basel Committee has begun such a process, but it will take time before these international initiatives have been implemented and FI is working on hastening this. In addition FI is investigating various opportunities, through supervisory measures, to improve the management of model risks in the short term and to deal with certain specific weaknesses in the construction of the internal models.

New standardised approaches and risk-weight floor

The Basel Committee is currently working on completing the Basel 3 framework. This work includes drawing up new standardised approaches for calculating capital adequacy ratios for different types of risk. The aim is that the new standardised approaches shall become somewhat more risk-sensitive than they are now. A permanent risk-weight floor is also proposed on the basis of the standardised approaches. This floor is aimed at reducing unjustified fluctuations in the capital adequacy ratio between banks that base their calculations of the ratio on internal models.³⁰

The final wording of the proposals has not been decided on yet and it is therefore not possible to say exactly how large an effect this will have on the Swedish banks' capital adequacy ratios. However, there is a risk that the introduction of a standardised floor will lead to the Swedish banks' capital adequacy ratios having a weaker link to the actual risk the banks take on when lending. In an international comparison Swedish banks have a low risk profile, which means that on average Swedish banks have lower risk weights calculated with the internal models than foreign banks. As the standardised levels in the Basel Committee's framework are designed to suit an average international bank, this can mean that the future capital adequacy ratios do not reflect the Swedish banks' actual risk taking.

This can ultimately lead to the financial system becoming less stable as banks are encouraged into more risky lending as it is less profitable to hold assets with lower risk and return. It can also lead to financial operations being moved outside of the banking system and FI's supervision to avoid capital adequacy requirements.

The banks' balance sheets can decline

Future regulations may lead to non risk-sensitive capital adequacy requirements. Together with initiatives to promote the capital markets, this can lead to a more market-oriented financial system. The European Commission's initiative, the Capital Markets Union (CMU) aims to mobilise capital to the real economy to increase investment and thus support economic growth and create more jobs.³¹ The harmonisation of

³⁰ These models follow strict regulations and must be approved by FI.

³¹ http://ec.europa.eu/finance/capital-markets-union/index_en.htm

regulations between member countries and simplified regulations for borrowing on the securities markets, particularly for smaller non-financial companies, is to promote alternative sources of financing instead of bank loans. This includes, for instance, the issuance of bonds and securitisation.

At the same time as the CMU promotes non-financial companies' alternatives to bank loans, the banks' capital adequacy ratios for lending increase, which can make them more restrictive in their lending. This can lead to the banks preferring to enter into transactions where they need to hold less, or no, capital.

At present, the market for securitisation is limited in Sweden. Higher capital adequacy ratios and ongoing amendments to international regulations could, however, give the banks incentives to shift from the covered bonds market, which is large and efficient, to the securitisation market, to finance their mortgages.

The benefits of this are that credit granting in Sweden would gain a more diversified funding and that the risk linked to lending, which is currently concentrated to the banking sector, would be shared with other agents. However, if the supply of credit moves away from the banking sector, for instance, through securitisation, it could entail new risks for both individual agents and the financial system as a whole. Firstly, it could contribute to credit risks in the system increasing, as the credit assessment is then made by the bank, but a different agent is taking on the risk of loss. This could reduce the banks' incentives for sound credit granting and mean that they do not actively assess the borrower's risk profile during the duration of the loan. Secondly, the financing risk may increase, as it is moved to other agents than the banks, as these agents can quickly leave the market when times are rough. This could mean that access to cheap credit is exaggeratedly high when times are good, while there is a severe credit crunch when times are rough. Another disadvantage is that agents outside of the banking system do not have access to the Riksbank's liquidity assistance, which can create problems in the event of a temporary liquidity crisis.

A third risk is that capital in the financial system as a whole may decline. If the banks move their credit assets outside of their balance sheet, their capital requirement declines and they can hold smaller capital buffers. If those who are holding the credit assets instead are not covered by the capital adequacy requirement, this can lead to lower capital buffers in the financial system as a whole. This will reduce the solvency of the financial system as a whole. In addition to these three risks, the disadvantage of credit being granted outside of the banking sector is that the risks as a whole are more difficult to control and regulate, as FI's powers of authority regarding the regulation and supervision of agents outside of the banking sector are limited.

Bail-in able debt in bankruptcy

If a large bank fails, this can have substantial negative effects on financial stability and the economy. States have therefore gone in and given financial support to systemically-important banks that have suffered problems. As this indirectly means that tax-payers bear the banks' losses, such government interventions are not considered desirable.³² Moreover, it may mean that the banks take more risk than is reasonable from

32 http://www.fi.se/upload/43_Utredningar/20_Rapporter/2015/fianalys_1-2015ny.pdf

society's point of view, as the banks, and their creditors, assume that the state will support them if they suffer problems.

To avoid this happening in the future, new regulations have been drawn up, at both European and global level, with the aim of the banks' shareholders and creditors bearing the full risk of losses and the need for recapitalisation after a failure. This will be achieved by writing down debts and capital instruments or converting them to shares.

Implementing this in practice will require that the major European banks hold (or issue) debt that can be written down or converted into capital. The regulations also allow this requirement to be met with capital. This requirement is known as the minimum requirements for own funds and liabilities (MREL) and should be regarded as a complement to the capital adequacy rules. In Sweden, the Government has decided that the Swedish National Debt Office (SNDO) shall decide on MREL. This includes decisions on which companies shall be subjected to such requirements and what level the requirements will have for each company. The legislation comes into force on 1 February 2016.

A similar proposal has been produced at global level by the Financial Stability Board (FSB). These requirements, which are known as Total Loss Absorbing Capacity (TLAC), refer in principle only to globally systemically-important banks, but may also be applied to other banks. The TLAC and MREL have similar purposes but differ considerably, for instance with regard to which debts may be included to meet the requirement and the levels of debt that can be written down or converted that must be issued. It is possible that the MREL will be implemented in a way that is compatible with the TLAC, partly to avoid the European globally systemically-important banks from coming under entirely different regulations than the other European banks. The FSB published its final proposal regarding the TLAC on 9 November 2015.

Although FI supports the basic idea behind the proposal, FI has expressed criticism of the proposal as it could create new systemic risks. For instance, breaches of the TLAC requirement are considered to be equally serious as failing to meet the minimum capital requirement. The consequence analysis made by the FSB also shows that most market agents asked are concerned that banks will find it difficult to issue qualifying debt even in a normal economic downturn. As the TLAC requirement leads to a need of recurring issuances of qualifying debt as specified by the regulations to continue to meet the minimum requirement, the requirement could potentially aggravate any confidence crisis. As the TLAC requirement entails a need for recurring financing of qualifying debt, the requirement may in itself lead, if a breach of the TLAC requirement is expected to be dealt with in the same way as a breach of the minimum capital requirement, to financing problems becoming self-amplifying for a company suffering a confidence crisis.

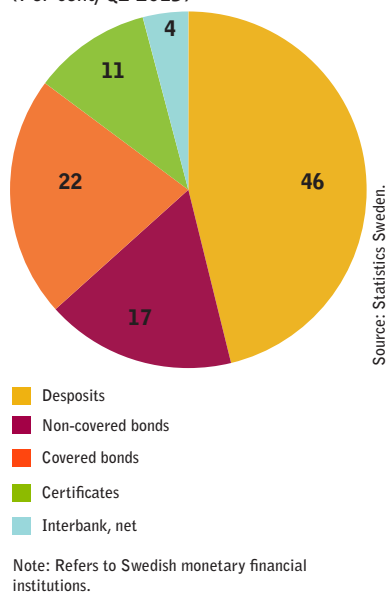
The minimum requirements in the final TLAC proposal, which are intended to apply from 1 January 2019, are set on the basis of a risk-weighted amount of 16 per cent and a non risk-weighted amount of 6 per cent. The Swedish major banks currently manage the non risk-weighted requirement, which is largely because of the high capital adequacy requirement in Sweden. However, the non risk-weighted requirement is more of a challenge, which is because Swedish banks have lower risk weights on their loans (see the section New standardised approaches and risk-weight floor). It is currently not possible for the major Swedish banks to

issue qualifying debt as in the TLAC requirement, as it is not a capital instrument, due to legal protection conditions for existing creditors. The fact that the TLAC proposal also entails an expectation that at least one third of the TLAC requirement will be met by this type of qualifying debt brings further challenges for Swedish banks in meeting the requirements.

The banks' financing and liquidity risks

Swedish banks obtain a large degree of financing through short-term market funding, while their assets have longer maturities. This makes them vulnerable to a fall in their investors' confidence and to financial shocks. Swedish banks have relatively large liquidity buffers, which mean that they can manage during a transition period if their investors' confidence were to wane. If the buffer proves insufficient but the bank is robust, the Riksbank can provide special emergency liquidity assistance.

25. DISTRIBUTION OF FUNDING
(Per cent, Q2 2015)

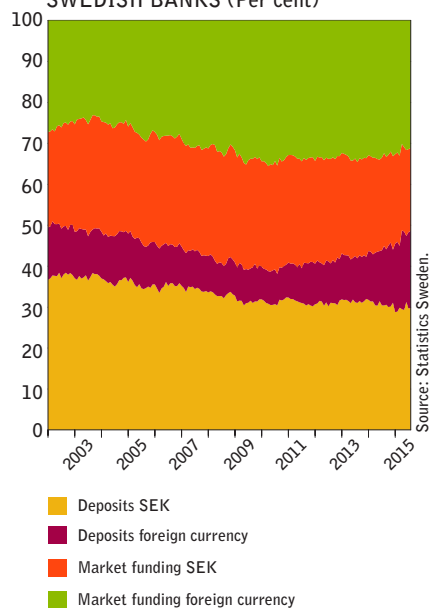


The stability of the financial system is largely based on the general public and market participants having confidence in institutions and markets. A high level of confidence from depositors and investors is necessary for the banks to have good access to financing. If confidence is undermined, it could mean that the banks suffer problems with their financing, which has a negative effect on their resilience and the stability of the financial system. This can ultimately lead to disruptions in the Swedish financial system that may entail problems for its stability.

THE SWEDISH BANKS' FUNDING BASE

The banks still have good access to funding. Swedish banks largely finance themselves through deposits from households and companies and with market funding by borrowing money on the financial markets through bonds and certificates. In addition, the banks also hold their own capital. At the end of the second quarter of 2015, the deposits of Swedish banks made up around 46 per cent of their total funding (Chart 25), which is low in a European comparison. The low percentage is because Swedish households have other savings forms than deposits to a greater degree than other European households, for instance, they save in shares, mutual funds and endowment insurances. As the Swedish banks have larger lending than deposits, they also obtain funding via the market to a larger degree than their European counterparts.

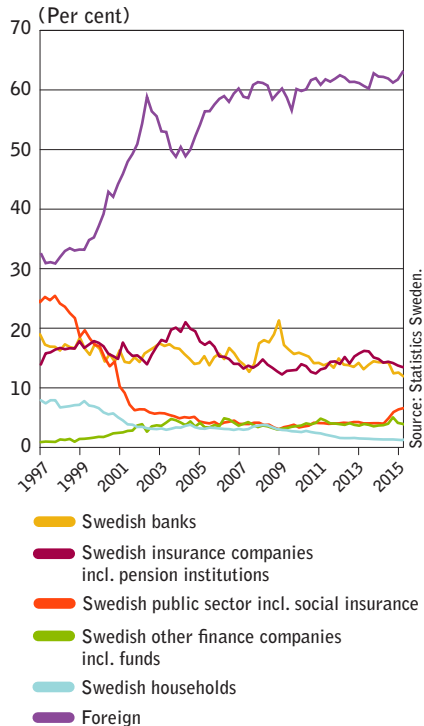
26. FUNDING STRUCTURE,
SWEDISH BANKS (Per cent)



Just over 60 per cent of the deposits is in SEK, and the remaining 40 per cent is divided into various foreign currencies. Foreign deposits have increased by almost 10 per cent since the first quarter of the year (Chart 26). Around 60 per cent of the banks' outstanding securities are issued in foreign currency (Chart 26) and are largely owned by foreign entities (Chart 27). To use this funding for Swedish lending, the banks must convert it into Swedish kronor. For this they use what are known as foreign exchange swaps (see the section Diversification and matching of funding affects the banks' risk exposure).

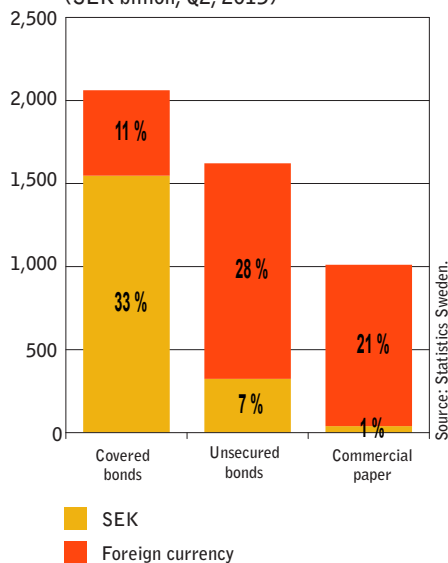
Almost half of market financing comprises borrowing via covered bonds (Chart 25). The covered bonds are issued in SEK but also in some other currencies, such as EUR, NOK and DKK. Short-term funding, on the other hand, consists primarily of certificates in foreign currencies (Chart 28). The market for bank certificates in SEK is small and the banks' outstanding certificates are therefore mainly issues in USD. Dollar funding generally has shorter maturities than other funding (see Chart 30).

27. OWNERSHIP OF SWEDISH BANKS' OUTSTANDING SECURITIES (Per cent)



Note. Refers to securities issued by Swedish monetary financial institutions. Securities refers to both covered and non-covered bonds and certificates. Interbank loans and deposits are not included. Swedish companies' branches and subsidiaries abroad are treated as foreign counterparties, while foreign branches and subsidiaries in Sweden are regarded as Swedish.

28. SECURITIES FUNDING OF BANKS (SEK billion, Q2, 2015)

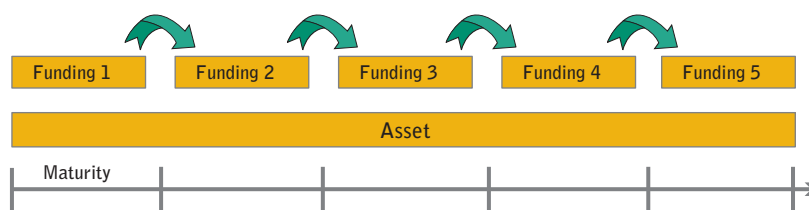


Note: Refers to Swedish monetary financial institutions.

MATURITY TRANSFORMATION IN THE BANKING SYSTEM CREATES REFINANCING RISKS

Maturity transformation, where the banks' debts fall due earlier than loans are repaid, is a central part of the banks' business, as the same time as it constitutes a vulnerability in the banking system. The banks' depositors shall be able to withdraw their money when they wish, while customers who borrow from the bank cannot be expected to repay their loans prior to the due date. For example, a mortgage has a long maturity, while the average maturity of the liabilities that fund the mortgages, such as bonds and deposits, are shorter (Figure 2).

FIGURE 2. Maturity transformation



Maturity transformation involves the banks taking an exposure to refinancing risk, that is, the risk of not being able to replace funding that reaches maturity. The shorter the maturity the banks' debts have, the more often they need to find new funding for a given loan. The larger the difference in maturity between debts and assets, the higher the refinancing risk will be. Notwithstanding the refinancing risks, a banking system without maturity transformation is not desirable. Maturity transformation is very valuable to both investors and borrowers. For instance, it makes it possible for households to borrow money for longer, despite the banks funding the loan with debts that have a shorter maturity than the loan. The focus should be on striking a balance whereby the banks' risks are reasonable, at the same time as the benefits of maturity transformation are enabled.

Swedish banks still have relatively short funding

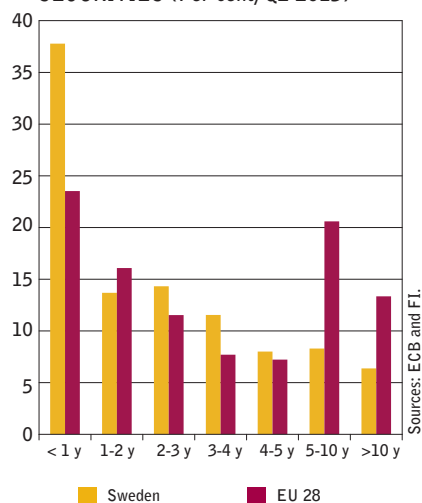
The average maturity for the market funding of the major Swedish banks is around three years, which is relatively short in a European comparison (Chart 29). At the same time, the actual maturity for many of the banks' assets is long, hence posing a high degree of structural liquidity risk (Chart 30). The banks' maturity transformation is a vulnerability in the banking system.

The banks' exposures to refinancing risk

To assess the bank's liquidity risks, it is not enough to merely look at their debts, their asset profile is also important. If short-term funding is used to finance liquid assets, or assets with short maturities, the refinancing risk is lower than if the same financing is used to fund illiquid long-term assets. The degree of matching of the debts and the assets' maturities is thus important.

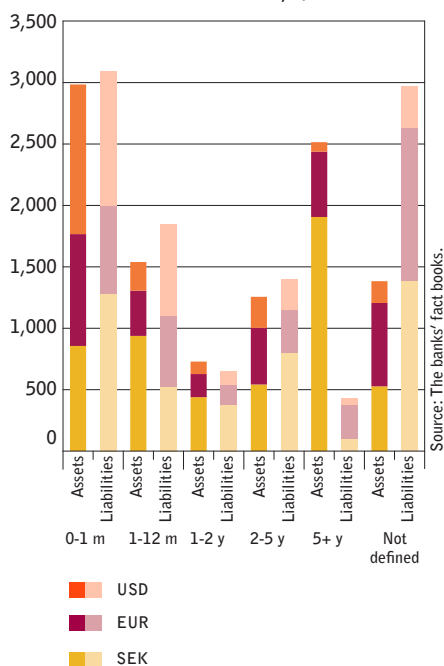
Chart 30 below shows the maturity profiles for the major banks' assets and liabilities for different currencies. There we can see that the maturities match one another relatively well both in the short and long run and that the refinancing risk is thus limited. The concept of maturity is not clear and well-defined, however and therefore does not have a simple content. Firstly, one needs to distinguish between fixing interest rates and tying up capital. Fixing interest rates means stating the time until the next turnover in interest rate on the debt while tying up capital, which is

29. MATURITY OUTSTANDING SECURITIES (Per cent, Q2 2015)



Note. Refers to Swedish and European major banks. Does not include shares or financial derivatives.

30. THE MAJOR BANKS' MATURITY PROFILES (SEK billion, Q2 2015)



Note. Comprise on average more than 85 per cent of the banks' assets and liabilities. (Apart from Nordea, where the average is around 60 per cent). The calculations do not include derivatives. The assets and liabilities that do not have a fixed set duration are included under the item Not defined.

what is relevant in discussions on liquidity, concerns when the money will actually be paid. When it comes to capital tied up, one should also distinguish between contractual and actual maturity. Loans that are either paid early or extended will have a shorter or a longer actual maturity than the contractual one. Even if history may give an indication of the difference between actual and contractual maturity, one must be aware that this difference may depend on market conditions and other conditions. There are also assets and liabilities where the maturity is not defined, known as non-maturity products.

Stable net funding limits risks in the longer run

FI considers that the banks should have stable funding with a well-balanced maturity transformation. To limit the structural liquidity risks in the bank's maturity transformation and enable the banks to better match the maturities between their assets and liabilities, the Basel Committee has produced a measure, the Net Stable Funding Ratio, NSFR³³. The NSFR is a risk measure that aims to ensure that the banks to a greater extent finance assets with a maturity of more than one year with liabilities that have a maturity of more than one year.

The coming requirements for NSFRs are still being developed. This risk measure will come into force and act as a minimum requirement for the banks with effect from 2018. The major Swedish banks are not currently far from the minimum requirement, that is, that the ratio is at least one (see Chart 31) and FI currently has no plans to introduce the NSFR as a binding requirement in advance. However, FI considers it desirable for Swedish banks to continue working on extending the funding used for long and illiquid assets to reduce structural liquidity risk.

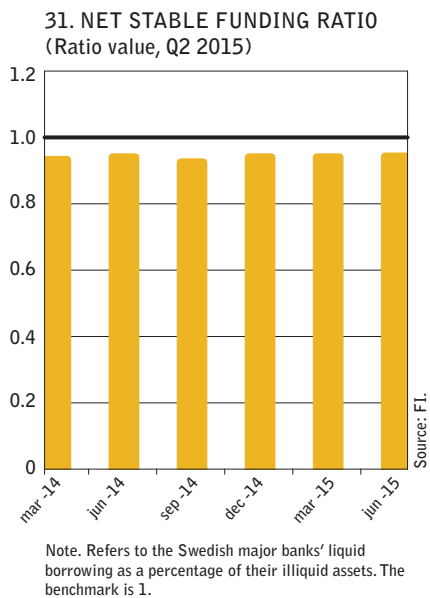
DIVERSIFICATION AND MATCHING OF FUNDING AFFECTS THE BANKS' RISK EXPOSURES

The maturity transformation comprises on dimension of the banks' financing risk, but another important dimension is who finances the banks. In Sweden, the general public save mostly in funds and pension plans, which means that deposits from the Swedish general public are not sufficient to finance the Swedish bank system. The major banks therefore turn to foreign depositors and investors in securities to obtain the financing they need. By having a diversified investor base, the major banks create several alternative funding channels that can be used to varying extents depending on what is most advantageous at the time. The degree of matching between liabilities and assets is decisive with regard to which risks the market financing is linked to.

The major banks' borrowing in foreign currency finances their assets in foreign currencies; for instance, a large part of the short-term foreign financing is used to finance the assets included in the major banks' liquidity buffers in foreign currency. The foreign financing means that the banks can also meet their customers' needs of loans and hedging in foreign currencies. Finally, the financing in foreign currencies is also used to fund assets in SEK.³⁴ The maturities and liquidity of the Swedish assets financed by borrowing in foreign currency are important to the risks the borrowing entails.

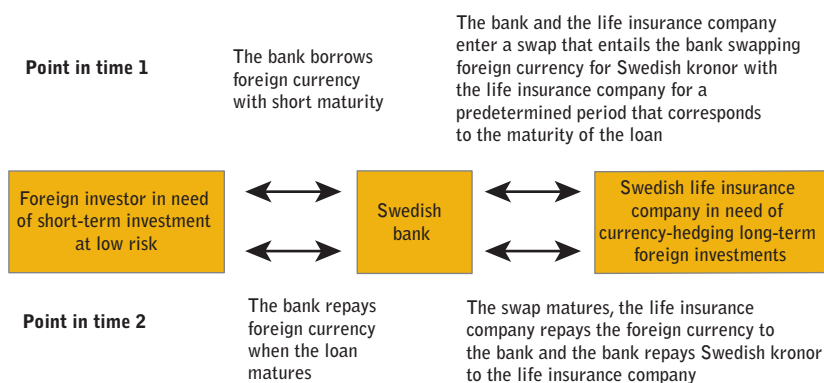
33 <http://www.bis.org/bcbs/publ/d295.htm>.

34 Hilander (2014), Short-term funding in foreign currency by major Swedish banks and their use of the short-term currency swap market, Economic Review 2014:1, Sveriges Riksbank.



The assets in SEK that are financed in foreign currency give rise to a foreign exchange risk. The banks manage this by entering into foreign exchange swaps with life insurance companies (Figure 3). Swedish life insurance undertakings have a converse interest in currency hedging. These investors have both Swedish and foreign investments (assets) to diversify their risks, but their insurance undertakings (liabilities) are mainly in Swedish kronor. The foreign assets mean that the life assurance and pension companies expose themselves to a foreign exchange risk that is the reverse of that for the major banks, which means they are natural counterparties with regard to hedging.

FIGURE 3. Short-term borrowings and currency hedging



Because the banks use currency hedging, their foreign funding does not pose any substantial foreign exchange risks, as long as the foreign exchange swap market works as it should. But on the other hand it can, as with short-term market funding in SEK, lead to liquidity risks if it finances assets in SEK with longer maturities. One difference compared with direct financing in SEK is that the behaviour of foreign investors can be affected by shocks that are not closely linked either to the major Swedish banks or Swedish conditions in general. Hence, dependence on foreign investors creates a channel of contagion through which shocks abroad can also spread to the Swedish banks. When it comes to financing in foreign currencies, it is in other words not that the borrowing takes place in another currency that is the problem. What might be a problem is if large parts of this financing are short-term and volatile and at the same time fund long-term assets.

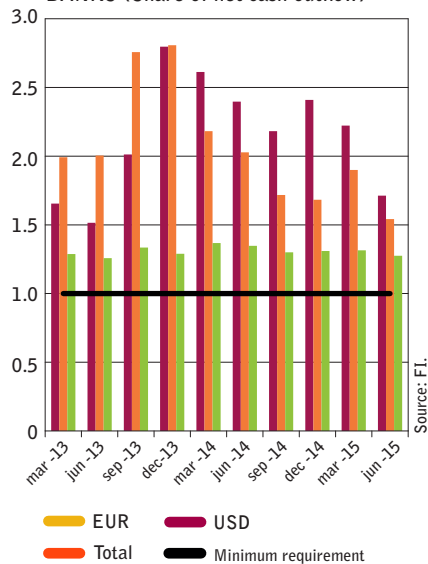
Liquidity buffers reduce short-term financing risks

Liquidity shortage can arise in several ways, but essentially concern an imbalance between inflows and outflows that is greater than the bank can cover with new financing at a reasonable cost. It is important that the banks have sufficient buffers to withstand funding shocks. Such buffers, or liquidity reserves, consist of assets deemed sufficiently easy to convert into liquidity when a bank has funding problems.

An important step in the work on reinforcing the banks' resilience to disruptions in their financing is the introduction of quantitative Liquidity Coverage Ratios, LCR.³⁵ The LCR is a risk measure in the form of a stress test that reflects the short-term liquidity risk. According to these requirements, banks must hold a liquidity reserve which at a minimum equates to 30 days' net outflows in stressed conditions. The requirements apply in the currencies EUR and USD and for all currencies combined.

³⁵ These requirements cover financial firms with a balance sheet total exceeding SEK 100 billion.

32. LIQUIDITY COVERAGE RATIO, AVERAGE OF SWEDISH MAJOR BANKS (Share of net cash outflow)



Note. Refers to liquid assets of major Swedish banks as a percentage of net cash outflows.

Source: FI.

At present, the major Swedish banks meet the LCR requirements both in the national regulations and in the EU's liquidity regulations, that is, their LCRs as all currencies included are greater than one (Chart 32).³⁶ The reason for the specific requirements in the banks' two most common foreign funding currencies is that the Riksbank does not have the same possibilities of providing liquidity support in foreign currency as in Swedish kronor. On the other hand, there is no requirement for a liquidity coverage ratio in SEK or other currencies, which in practice means that the banks can cover the whole of their liquidity buffer in EUR and USD.

Although FI considers that sufficient liquidity coverage is important, FI's assessment is that a liquidity coverage ratio in SEK may entail negative consequences. This is partly because of the design and size of the Swedish market. With a requirement for a liquidity coverage ratio in SEK the banks could, for instance, be forced to own one another's covered bonds to a greater extent than today. Such cross-ownership could increase the interlinking and vulnerabilities in the financial system as a whole (see the chapter Interlinking and contagion).

Different funding sources present different vulnerabilities

There are both benefits and drawbacks in deposits and market funding. If the point of departure is to reduce liquidity risks and strengthen financial stability, deposits are generally considered to be a stable funding source that do not expose the system to major risks. Deposits from the general public are much less volatile, particularly from small companies and households. However, if a bank suffers a difficult confidence crisis, this can lead to many savers quickly withdrawing their money. This kind of bank run can in very extreme circumstances even mean that the bank becomes insolvent and goes bankrupt. In Sweden, as in most countries in the western world, the state has set up a deposit guarantee to reduce the risk of bank runs. The deposit guarantee means that the state guarantees the customers' deposits with institutions connected to the guarantee. The guarantee comes into force if an institution goes bankrupt or when FI decides that it shall come into force. The state then reimburses capital and accrued interest up to a maximum amount corresponding to EUR 100,000 per person and institution.

However, there is no equivalent to the deposit guarantee for investors. This generally makes investors more flighty than depositors. A significant factor with regard to market funding is how deep and diversified the demand from investors is. The banks should be able to borrow via several different sources of financing and thus have an investor base that is diversified and safe.

THE RIKSBANK'S LIQUIDITY ASSISTANCE AS A COMPLEMENT

The banks' liquidity reserves mean that they can manage for a period of time if they were to be excluded from the market. Requirements for

³⁶ The EU's LCR requirements state that the buffer may contain three different levels of high-quality assets. Level 1 assets are the most liquid, have 0 per cent risk weight and may comprise the entire buffer. Level 2A assets comprise securities risk-weighted up to 20 per cent and may comprise a maximum of 40 per cent of the buffer. Finally, level 2B assets, which include corporate loans and equity-related securities and may comprise a maximum of 15 per cent the level 2 assets. The LCR assets will be phased in gradually and they shall be implemented in their entirety by 2019, according to the Basel III regulations. Finansinspektionen decided that Swedish banks must hold level 1 assets to 100 per cent with effect from 1 January 2013.

liquidity buffers in individual institutions reduces the probability of financial instability and of the state needing to intervene. However, in a more serious scenario the authorities will probably need to be involved.

For a long time now,³⁷ the principle for liquidity assistance has been that the Riksbank should support solvent banks in exchange for good collateral, albeit on terms that mean this assistance is not used by banks under normal market conditions. Stringent loan terms and requirements for liquidity buffers reduce the probability of banks over-using liquidity assistance and taking too much risk. The challenges linked to the central bank's liquidity assistance thus involve finding a solution that complies with the law and with how banks and markets function in distress and at the same time creates good incentives.

Emergency loans to individual companies must not be government support

If an individual institution suffers problems, it can use its liquidity buffer. The bank can mortgage or sell the assets in the buffer to obtain liquid funds. During this period, the authorities can assess whether the bank only has liquidity problems and if it is still solvent. If the bank is insolvent then there is a question of how it shall be resolved.

The Riksbank has the possibility to grant emergency loans on special terms to companies under FI's supervision if there are exceptional circumstances. However, the emergency loans are governed by regulations preventing the support from entailing a transfer of value from the state to private agents. These regulations make it more difficult for the Riksbank to provide, for instance, liquidity assistance to banks in resolution, as they may ultimately go bankrupt.

General liquidity assistance if the inflation target is threatened

In the event of an extensive systemic shock, it is doubtful whether the banks can make use of their liquidity buffers in the same way as when an individual bank suffers problems. This is because there are probably not enough buyers on the market for the securities the crisis-stricken banks need to sell from their liquidity reserves. It will become expensive, or even impossible, for the banks to hold liquidity to the extent required to manage a systemic crisis, while the Riksbank can relatively easily supply liquidity in SEK to solvent banks in a crisis situation. A "promise" of liquidity assistance in a financial crisis can therefore be regarded as an insurance that the Riksbank can supply at a relatively low economic cost.

The Riksbank can take measures that generally improve liquidity, such as offering loans at longer maturities than normal and accepting more collateral types when lending than otherwise. The Riksbank showed through its actions during the financial crisis in 2008 that liquidity assistance measures can efficiently contribute to resolving or alleviating prevailing problems. However, according to law the Riksbank may generally only provide liquidity assistance for monetary policy purposes.

Signal effects and incentives

The Riksbank's standing facilities, which comprise part of the monetary policy steering system under normal circumstances, are a further possible tool for liquidity assistance. The standing facilities could in theory be used to help companies suffering problems. However, this tool has limitations as it is probable, that a bank suffering confidence problems

37 Bagehot, Walter (1873), "Lombard Street: A Description of the [London] Money Market"

would avoid using the facilities because it did not wish to appear weak.

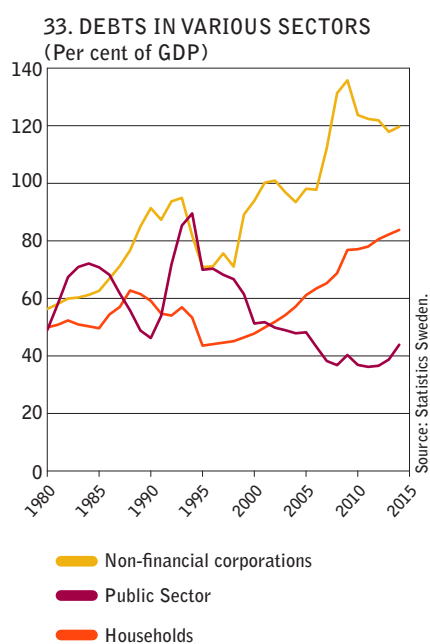
If a bank has the impression that it can borrow from the Riksbank in a systemic liquidity crisis, its possible unwillingness to lend money in times of market turbulence and during uncertain funding can be alleviated and thus the consequences of a liquidity crisis can be dampened.³⁸ Several central banks have clarified their views of liquidity assistance to reduce the uncertainty in a future crisis situation.

The knowledge that the Riksbank offers liquidity assistance in crisis situations, on the other hand, can increase the institutions risk propensity, what is known as moral hazard. This can be regarded as a transfer of value from the community to the company management and owners, as they receive the profits if all goes well, whereas the tax-payers only get to pay the bill if the risk taking is unsuccessful.

38 Carlson, Duygan-Bump, Nelson (2015), Why do we need both liquidity regulations and a lender of last resort? A perspective from Federal Reserve lending during the 2007-09 US financial crisis, BIS Working Papers No 493.

Indebtedness and the Swedish economy

High indebtedness among households can lead to increased economic instability. Housing prices and debts are increasing at a rapid pace and the risk of a fall in housing prices has increased. If housing prices fall, highly mortgaged households may restrict their consumption severely and thereby worsen an economic downturn. If the growth in debt is not slowed down, further measures may need to be taken. The Government is currently working on giving FI powers of authority to introduce an amortisation requirement. FI intends to immediately introduce the requirement as soon as this is done.



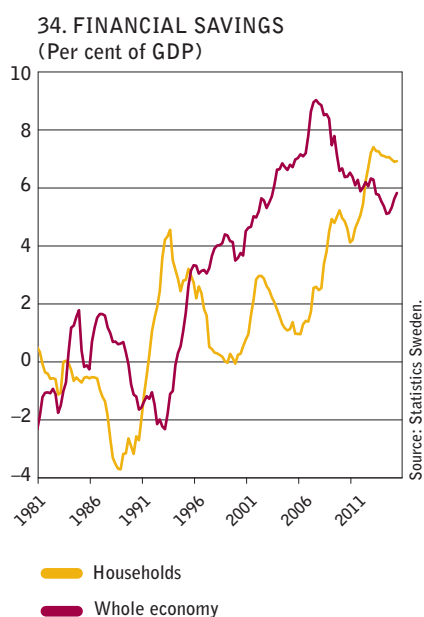
Indebtedness enables corporations and households to invest and consume without requiring from them an advance build-up of equity. It thus contributes to a more efficient use of capital and a more even level of household consumption over time. The ability of households and corporations to take on debt is thus positive for the national economy. However, high indebtedness also gives rise to vulnerabilities, for lenders and borrowers and the economy at large. To ensure that imbalances do not build up, it is important for FI to monitor risk taking in non-financial companies and households.

In an environment of low interest rates, rising incomes and good economic growth, asset prices and debts can rise quickly. If such a development unexpectedly changes for the worse (see the section Risks to financial and economic stability in the chapter The economic situation), then borrowers' possibilities to manage the regular expenditure for the debt will decline and asset prices will fall. This can lead to financial and economic instability.

THE NON-FINANCIAL SECTOR IS BOTH INDEBTED AND THRIFTY

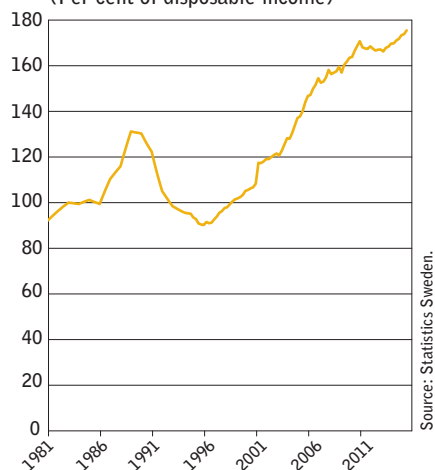
The debts in Sweden's non-financial sector are primarily concentrated to non-financial companies and households. They account for around 50 per cent and 30 per cent of total debt respectively, while the public sector accounts for the remaining 20 per cent (Chart 33). Companies' indebtedness normally follows general economic developments fairly well, while household indebtedness is driven by longer sequences of events. On the part of households, the surge in debt of the past two decades is largely due to structural driving forces, such as an increasing share of home-owning households, later entry onto the labour market, rapid urbanisation, lower housing taxes and lower real interest rates.³⁹ Some of these factors are closely linked to developments in the housing market, while some affect how many households are indebted (see the section Housing prices continue to rise rapidly).

At the same time as indebtedness has increased, saving in the Swedish economy has risen to historically-high levels. Households' financial savings have been positive for a long time and in recent years have been around 7 per cent of GDP (Chart 34). Non-financial companies and the public sector have also in general had positive savings over the past two



³⁹ Hansen (2013), – Explanations for the development in household debt since the mid-1990s. Analysis materials for the Council for Cooperation, Memorandum 1, FI.

35. HOUSEHOLD DEBT
(Per cent of disposable income)



decades. All in all, this means that the total financial saving has been positive since the mid-1990s and that the wealth position has improved in all three sectors (see the section Households' assets are larger than their debts). This build-up of wealth creates a general resilience to shocks in the real economy or on the financial markets for the non-financial sector.

HOUSEHOLDS HAVE A GOOD ABILITY TO PAY BUT ARE VULNERABLE TO A FALL IN HOUSING PRICES

The aggregate debt-to-income ratio, that is the household sector's total debts in relation to their disposable incomes, increased from 100 to 170 per cent from the end of the 1990s up to 2010 (Chart 35). Experience and research indicate, however, that the change of pace in debt is a better indicator that imbalances are building up than the absolute level of the debt-to-income ratio.⁴⁰ The rate of increase in household debt slowed down considerably in 2010, but has begun to rise again since early 2014. Household debt is now increasing by just over 7 per cent a year, at the same time as household income is increasing by just over 3 per cent (Chart 36). This means that the household debt-to-income ratio is increasing. In the long run, household debt cannot increase more than incomes, but structural change can lead to relatively long periods with an increasing debt-to-income ratio. Around 80 per cent of household debt is comprised of mortgages. The development of debt is thus closely linked to housing prices (Chart 37).

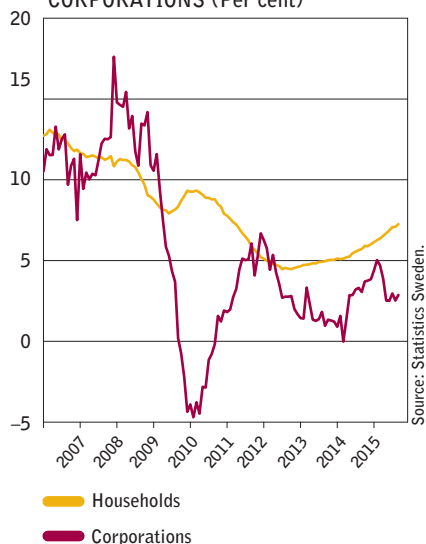
To assess vulnerabilities linked to household indebtedness it is important to study several different dimensions, including households' ability to manage the regular expenditure connected with the debt and the value and composition of household assets.

Households have a good ability to pay

If households cannot manage to pay their loans, this can lead to losses for the banks and in the worst case to a financial crisis. Households' interest-to-income ratio, that is, interest costs in relation to household disposable incomes, has fallen considerably since the beginning of the 1990s and is now lower than it has been for the past 35 years (Chart 38). If the ratio is low, despite more households being indebted and on average having higher debts, this is because lending rates are at historically-low levels.

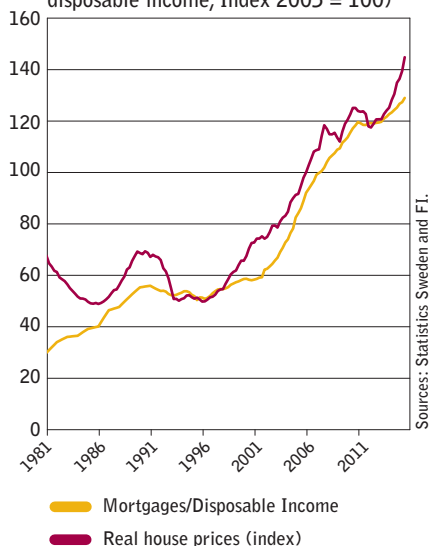
Several analysts, including the IMF and the Riksbank, believe that global real interest rates, which steer Swedish long-term real interest rates to a great extent, will remain low for many years to come.⁴¹ This indicates that mortgage rates may remain low over a long period of time. The interest-to-income ratio can thus be expected to remain low over the coming years. Households' expectations of future interest rates have declined as interest rates have fallen.⁴² This means that the expected cost of borrowing has also fallen, which contributed to higher indebtedness. A prolonged period with low interest rates could, however, lead to some households underestimating future interest rate hikes. Normally, interest

36. GROWTH IN LOANS, HOUSEHOLDS AND NON-FINANCIAL CORPORATIONS (Per cent)



Note. Refers to the annual change in lending from monetary financial institutions.

37. HOUSEHOLDS MORTGAGES AND REAL HOUSE PRICES (Per cent of disposable income, Index 2005 = 100)



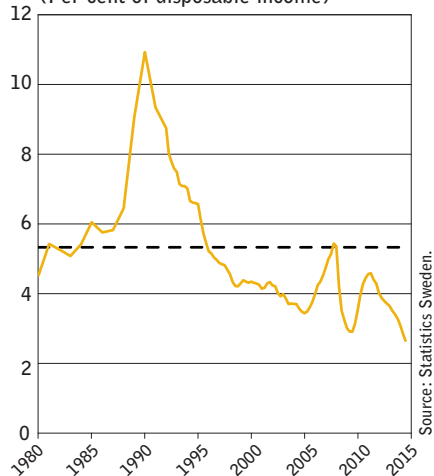
40 See, for instance, Bunn and Rostom (2014), Household debt and spending, Quarterly Bulletin 2014 Q3, Bank of England.

41 "World Economic Outlook", April 2014, IMF, "Lower neutral interest rate in Sweden?", Economic Commentary no.8 2014, Sveriges Riksbank

42 Refers to households' interest expectations up to five years ahead. Source: NIER

38. HOUSEHOLD INTEREST-TO-INCOME RATIO

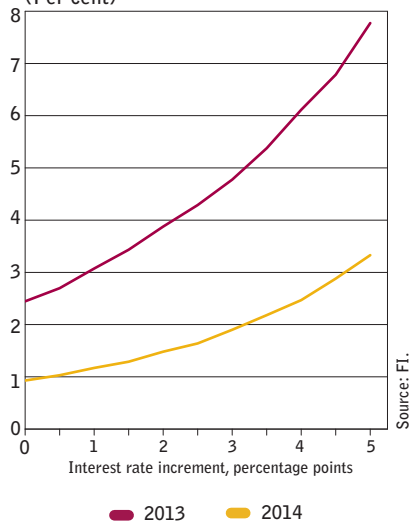
(Per cent of disposable income)



Note. Interest payment is stated after tax.

39. PERCENTAGE OF HOUSEHOLDS WITH A DEFICIT AT VARIOUS INTEREST RATE INCREASES

(Per cent)



Note. Sensitivity to interest rates for households with new mortgages has been calculated by increasing the actual mortgage rate to see which households have a deficit in their "discretionary income" calculations.

rates rise relatively slowly as economic activity improves. Then household incomes normally also rise and thus their ability to pay their interest expenditure. But if interest rates were to rise unexpectedly quickly, some households may be forced to, or may choose to, make adjustments by cutting their consumption to reduce their debts and thus their interest expenditure. An unexpectedly large rise in interest rates could also have a negative effect on housing prices. FI considers, like many other analysts (for instance, the National Institute of Economic Research and the Riksbank), that the risk of a rapid upturn now is slight. However, If mortgage rates were to rise to 6 per cent (which is the highest level since 1998), the current level of households' total debt-to-income ratio means that the aggregate interest-to-income ratio for households would amount to around 7 per cent and hence be higher than the average over the past thirty years, which has been 5.3 per cent.⁴³

A supplementary portrayal of the resilience of households can be gained by analysing how individual households are affected by economic shocks. FI therefore carries out regular stress tests of households with new mortgages to analyse their sensitivity to rising interest rates or higher unemployment. The stress tests show that households have substantial resilience to higher interest rates, loss of income and declining house prices.⁴⁴ For instance, a rise in interest rates of 5 percentage points means that only around 4 per cent of households would have a deficit in their monthly budget (Chart 39). Despite much higher interest rates, most households with new loans would thus manage to meet payments on their loans. The resilience of households has also increased substantially in relation to 2013, when an increase to the interest rate of 5 percentage points put almost 8 per cent of households into deficit. The difference can be explained to some extent by the fact that interest rates on average fell between 2013 and 2014, although the majority of the change is due to a drop in the share of borrowers with small margins. On the whole, FI finds that Swedish households are considerably resilient, and the risks of major loan losses in the banking system linked to household indebtedness are low.

Two scenarios for household debt

The development of debt contributes valuable information to FI's total assessment of financial and economic stability in Sweden. A rapid increase in indebtedness can entail vulnerabilities for the financial system and for the real economy. By analysing different scenarios for indebtedness, FI can better predict when the risks will increase and thus begin work on potential measures at an earlier stage.

FI has created a model for household debt which, in addition to debt, contains property prices, consumer confidence and a mortgage rate.⁴⁵ The model's forecasts for individual variables are partly dependent on how the other variables develop, and partly on a long-run normal level. The normal

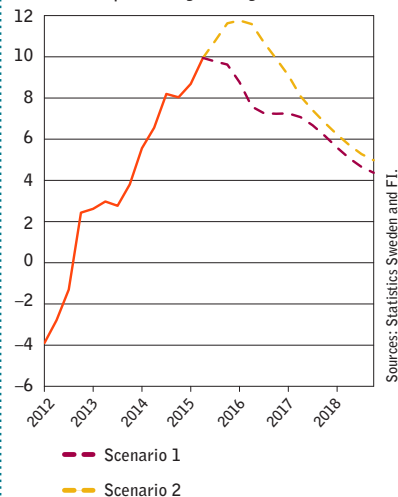
43 Such an upswing in mortgage rates would probably coincide with increasing disposable income, which would curb the upswing in the interest-to-income ratio somewhat.

44 See The Swedish mortgage market 2015, 14 April 2015, FI Ref. 14-8731.

45 A model summarises the information in data. However, models cannot capture all of the information and therefore often need to be supplemented with expert judgements.

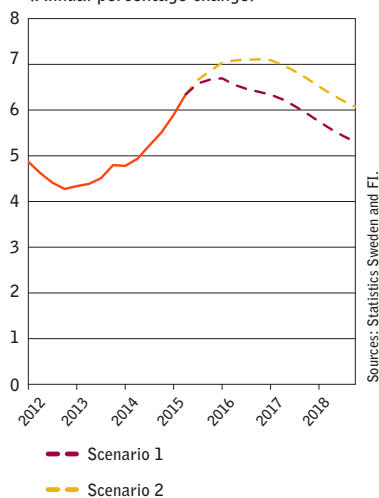
level is a combination of assessments and information in data.⁴⁶ The normal situation for the debts in this case is related to nominal GDP.⁴⁷ The model is assessed on the basis of its forecasting performance and how well the estimated correlations between the variables coincide with economic theory.⁴⁸

40. MODEL FORECASTS FOR PROPERTY PRICES FROM Q2 2015 (Annual percentage change)



Note. Red broken line is the NIER scenario. Orange broken line is the house price scenario where property prices are expected to grow faster than in the NIER scenario.

41. MODEL FORECASTS FOR HOUSEHOLD DEBT FROM Q2 2015 (Annual percentage change)



Note. Red broken line is the NIER scenario. Orange broken line is the house price scenario where property prices are expected to grow faster than in the NIER scenario.

FI has produced two scenarios for the development of household debt with the aid of the model's forecasts. In the first scenario, it is assumed that GDP and the repo rate will develop as in the National Institute of Economic Research's (NIER) assessment in the wage formation report in October (scenario 1).⁴⁹ Swedish house prices have recently shown a rapid increase and during the autumn the rate of price increase has risen. There is a risk that house prices will continue to rise rapidly, and therefore a stronger rate of increase in house prices is assumed in the second scenario, compared with the scenario 1 (scenario 2).

Chart 40 shows how the property price index develops in the scenario 1 (red line) and in the house price scenario (orange line). In the scenario 1 the rate of increase in property prices slows down, measured as an annual percentage change, throughout the forecast period. In the house price scenario, the property price index is expected to grow 1 percentage point faster over four quarters than in the scenario 1.

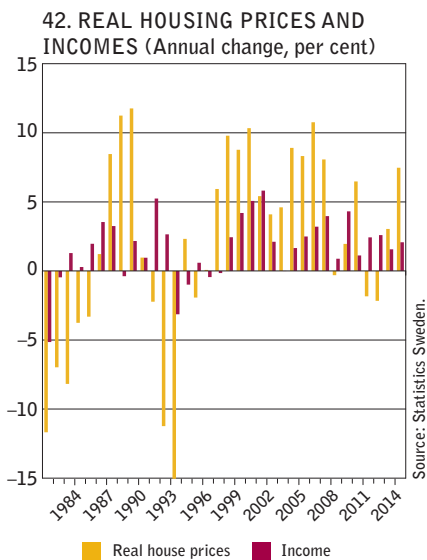
In the scenario 1 the annual percentage change in debt declines during the entire forecast period (red line in Chart 41). The debt increases faster than is assessed as sustainable in the long run and the growth rate is therefore dampened. However, the adjustment occurs slowly, because the debts have historically shown a protracted adjustment to the normal situation. Moreover, low interest rates during the forecast period contribute to the slow dampening.

46 By normal situation (or equilibrium) we mean the situation in the model when the effects of all the shocks have waned.

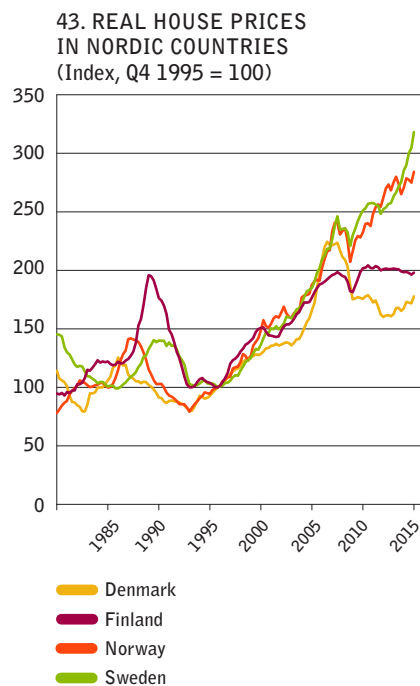
47 Over the past ten years, the debts have increased much faster than nominal GDP. However, growth in debt has been driven by structural factors such as conversion of rental properties to tenant-owned homes and lower housing taxes. FI assesses that these driving forces will not continue.

48 See FI Analysis No. 4, FI Ref. 15-3614, for a more detailed description.

49 The NIER's view of the economic situation is linked to the model's variable in a bridging model.



Note. Refers to a change in the property price index and households' disposable income per capita, both deflated by the consumer price index.



Sources: BIS Residential Property Price Database and Thomson Reuters Datastream.

The rate of increase in debt rises and also dampens at a slower pace than in the scenario 2 (orange line in Chart 41). All in all, the higher house prices are expected to entail a debt level that is around 2.5 per cent higher than in the scenario 1 at the end of 2018.

In the scenario 1, debt as a percentage of households' disposable income, that is the debt-to-income ratio, stabilises at 185 per cent. Debts and disposable income thus grow equally quickly at the end of 2018. In the house price scenario, the debt-to-income ratio is expected to be almost 190 per cent at the end of 2018. Even if households' disposable income are somewhat higher in the scenario 2 as a result of stronger consumer confidence, debts increase more as a result of the higher property prices.

The scenarios indicate that the debts can be expected to grow more slowly in the future. However, forecasts are always uncertain and FI therefore regularly monitors developments in house prices and household debt.

Housing prices continuing to rise rapidly

Swedish housing prices have recently risen increasingly rapidly and are currently rising much faster than household income (Chart 42). In an international perspective too, Swedish housing prices have risen rapidly (Chart 43). Developments reflect the high demand for housing, particularly in metropolitan areas where there is a large shortage of housing. Low interest rates and the design of the tax system contribute to reducing costs for loan-financed housing purchases, which increases households' willingness to pay. At the same time, access to rented housing is limited by long queues for housing, which mean that there are limited alternatives to buying a home. Nor can one rule out the possibility that some households take the rise in housing prices for granted, and therefore underestimate the risk of falling or stagnating housing prices, which could further increase their willingness to pay. If there is a turnaround in housing prices, or if the cost of financing them by loans increases, households' willingness to pay may decline.

In the long run, it is not sustainable for housing prices to increase much faster than household incomes. It is therefore reasonable to expect that the current rate of increase in housing prices will slow down. However, it is difficult to predict when and how this will happen. If the rate of price increase shows a fairly moderate slowdown this will probably contribute to a calmer development in household debt (see the box Two scenarios for household debt). If, on the other hand, this happens through a heavy fall in housing prices, the economic costs could be substantial, even if households manage to pay their loans (see the section High loan-to-value ratios affect macroeconomic developments). However, there is a risk that the rate of increase in house prices will remain at a high level, which would probably mean that debts continue to increase at a faster pace than is sustainable in the long run (see the box Two scenarios for household debt). If housing prices continue to rise at a rapid pace, there is also a risk that home-buyers' expectations of future price developments in the housing market will be overly positive. If the expectations are not fulfilled and housing prices instead remain unchanged, households may be forced to reduce their consumption. And if these expectations prove to be wrong, there may also be severe adjustments in housing prices.

By taking into account indicators, econometric models such as supply and demand factors, there are some signs that housing prices may be overvalued. A traditional indicator of overvaluation, housing prices in

relation to income levels, now points to current Swedish housing prices exceeding the long-term trend by 25 per cent, which can be compared with a deviation of 15 per cent one year ago.⁵⁰

Another common indicator is the housing cost for owning one's own home in relation to the cost of rented apartments. As a result of the rental regulations covering many rented apartments in Sweden, however this indicator should be interpreted with great caution. This is because rental regulations mean that the average rent for Swedish rented apartments is lower than a market rate would be. Instead, one can use the rent levels on the secondary market or the rent of newly-produced rental properties, where rent-setting is freer. Such comparisons have been made for Stockholm, and on the basis of these apartment prices do not appear to be valued unreasonably, despite the rapid increase in recent years.⁵¹ However, a comparison of housing costs between tenant-owned apartments and rented apartments disregards the risk that housing prices will fall that the buyer of a home has to take. To compensate for this risk, the housing cost for owning one's own home should be lower.

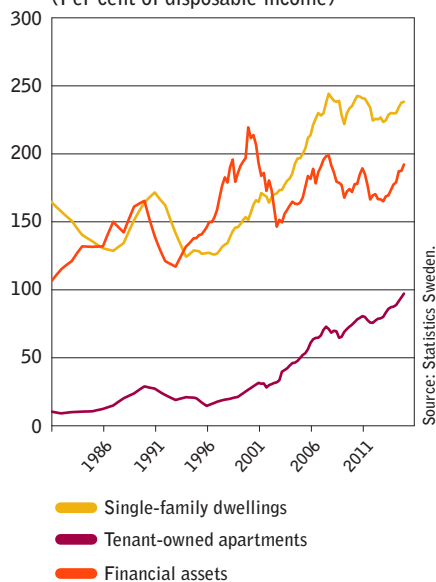
There are several studies that look at Swedish housing prices on the basis of fundamental driving forces, but they do not give any clear response as to whether homes in Sweden are overvalued.⁵² These studies point to change in a number of fundamental factors since the mid-1990s that have contributed to higher prices, and thereby also to higher indebtedness. Factors such as low real interest rates, abolished property tax, urbanisation in combination with a poorly functioning rental market, a low construction level, higher disposable income and a rise in unamortised borrowing are included here.

Regardless of whether housing in Sweden is overvalued or not, there is a risk of a fall in prices. Prices are currently rising rapidly, and there is considerable uncertainty over what a fundamentally reasonable price is. FI therefore assesses that the risk of a fall in housing prices has risen compared to a normal situation.

Households' assets are larger than their debts

At the same time as households' debts have increased, their assets have increased at almost the same pace. This is partly because the value of the assets has increased, and partly because households have saved a lot in recent years (Chart 34). Households' high level of saving implies that many households have good margins in their finances and that the increasing debts are to a large extent used to finance their assets rather than for consumption. The assets are mainly made up of homes and liquid financial assets (Chart 44). The value of households' assets are around three times greater than their debts and this relationship has remained relatively stable over the past 35 years. This means that the household sector has a large net wealth, but unfortunately there is no information on the allocation of assets and debts for individual households. It is the-

44. HOUSEHOLDS' ASSETS AND SINGLE-FAMILY DWELLING
(Per cent of disposable income)



Note. Tenant-owned apartments are classified as a real asset in this context. Foreign shares and investment funds as well as Swedish unlisted shares are not included since they are not comparable over the whole period. Pension rights, e.g. occupational pensions and premium pension, are not included.

50 European Commission (2015), Macroeconomic Imbalances Country Report - Sweden 2015, Commission staff Occasional Paper 226

51 See blog post by Harry Flam on www.ekonomistas.se, 7 August 2015 and Evidens (2015) "Den bedrägliga skuldkvoten" (the deceptive debt-to-income ratio). There are no calculations for the rest of Sweden.

52 Sörensen (2013), The Swedish housing market: Trends and Risks, Report to the Swedish Fiscal Policy Council, 2013/5; IMF (2013), Nordic Regional Report - Selected Issues, IMF Country Report No. 13/275, September 2013, International Monetary Fund.

refore uncertain to what degree net wealth differs between the different households. It is also difficult to assess how savings are allocated.

A relatively large share of lending in the latter part of the 1980s went on consumption rather than the purchase of homes. At the same time, the high level of consumption over this period meant that households ended up with negative financial savings (Chart 34). It was therefore not surprising that the crisis at the beginning of the 1990s led to a drastic upswing in the financial savings of households with a view to restoring the balance between assets and liabilities. Today, the situation is different because the financial savings of households are high, and in parallel with indebtedness, households have built up financial assets and housing wealth (Chart 44). Their net financial position, assets in relation to debts, is also much stronger than in the 1980s and the beginning of the 1990s, even excluding occupational pensions and savings in the premium pension system. As it is difficult to determine how wealth and savings are distributed, one cannot rule out the possibility that some households have small wealth buffers, and are thus vulnerable to an unfavourable development in asset prices. On the whole, however, FI assesses that Swedish households have a good financial position.

High loan-to-value ratios affect macroeconomic developments

Households' good ability to pay and the fact that their assets are larger than their debts implies that household indebtedness does not comprise a direct threat to financial stability.⁵³ On the other hand, indebtedness can lead to increased economic instability. International experience suggests that highly leveraged households tend to tighten their consumption more sharply in economic shocks such as a fall in house prices, and thus deepen economic downturns.⁵⁴ There can be many reasons for the stronger reaction, for example that households have short planning horizons, that they underestimate risks or that their expectations about the future change quickly. This might have caused households to save too little or have taken excessive risks during the years preceding the economic downturn. With regard to Sweden, the National Institute of Economic Research finds that a single drop in housing prices of 20 per cent can entail a downturn in household consumption of 1.7 percentage points and an upturn in unemployment of 1.1 percentage points, which corresponds to almost 35,000 people.⁵⁵ The effects will be somewhat larger if the price fall is lasting or if it takes place in connection with global financial turbulence.

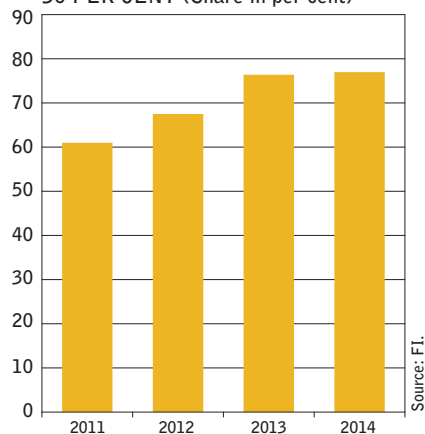
The percentage of households with loan-to-value ratios above 50 per cent has increased in recent years in line with the rise in housing prices, although the rate of increase slowed down substantially in 2014 (Chart 45). In FI's opinion, households with loan-to-value ratios above 50 per cent risk reacting strongly to altered economic conditions, and hence amplifying economic fluctuations. There is thus reason to try to hold down the percentage of households with high loan-to-value ratios. FI therefore presented a proposal in March 2015 with a requirement for amortisation

53 For effects on the covered bonds market, see the chapter 'The banks' financing.'

54 Andersen et al (2014), 'Household debt and consumption during the financial crisis: Evidence from Danish micro data', Working Paper, Danmarks Nationalbank, Dynan and Karen (2012), 'Is household debt overhang holding back consumption', *Brookings Papers on Economic Activity*.

55 Gustafsson et al (2015), 'Macroeconomic Effects of a Decline in Housing Prices in Sweden', Working Paper 138, National Institute of Economic Research, March 2015.

45. NEW MORTGAGE HOLDERS WITH A LOAN-TO-VALUE RATIO EXCEEDING 50 PER CENT (Share in per cent)



down to a loan-to-value ratio of 50 per cent. An amortisation requirement increases households' resilience to shocks and thus reduces the risk of fluctuations in economic activity being reinforced because vulnerable households reduce their consumption. As a result of lack of clarity on FI's power of authority to introduce an amortisation requirement, however, FI chose to wait before introducing the requirement. The Government has now begun a process to grant FI clearer powers of authority in this question. When this work is finished, FI aims to introduce an amortisation requirement as soon as possible.

Measures to manage the risks linked to household indebtedness

FI has implemented and given notice of several measures to reduce the risks linked to household indebtedness and the housing market. In addition to the day-to-day work on supervision of the banks' credit-granting processes, the following measures have been implemented or notified since 2010:

- In 2010 FI introduced a limitation on loans collateralised by the home to 85 per cent of the value of the home, known as the mortgage cap.
- To ensure that the banks' internal models do not underestimate the credit risk in the mortgage portfolios and as the banks do not take into account the so-called systemic risks that mortgages entail, FI has raised the risk weight floor for mortgages in two stages in 2013 and 2014, from around 5 to 25 per cent.
- New capital requirements have been introduced to increase the banks' resilience in crisis in accordance with new EU regulations.⁵⁶
- The countercyclical buffer was decided in September 2014 at a buffer rate of 1 per cent, applicable as of September 2015. On 22 June 2015 FI decided that the countercyclical capital buffer should be raised to 1.5 per cent with effect from June 2016.
- FI has, in consultation with the Swedish Bankers' Association, also worked to promote offering individually tailored amortisation plans to the banks' customers when they are granted a mortgage, with effect from 2014.

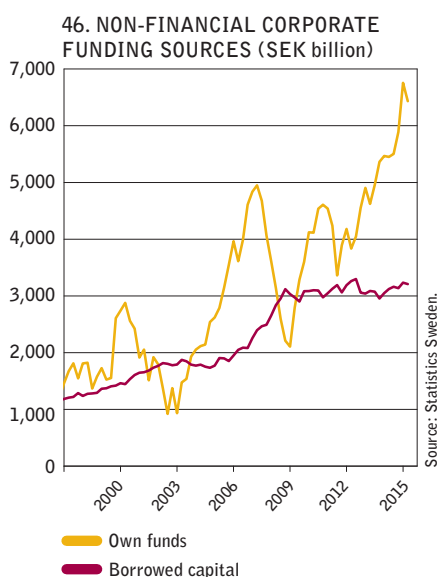
FI considers there is a need for an amortisation requirement in line with FI's proposal and that a requirement should be introduced in the near term. An amortisation requirement increases the resilience of households to shocks and reduces the risk of the Swedish economy being negatively affected as a result of unforeseen events in Sweden or abroad. During the autumn, the Ministry of Finance has presented a proposal as to how FI shall introduce an amortisation requirement. It means that the requirement can be in force in the summer, which will probably contribute to a calmer development on the housing market. FI works continuously on evaluating the measures taken and the need for further measures. If developments in household indebtedness lead to further risks building up, a need to do more may arise. Examples of possible measures include the introduction of some form of limit as to how much a household may borrow in relation to its income, a so-called debt ceiling, or a limit to the household's total interest and amortisation payments in relation to its income, a ceiling for what is known as the debt service ratio.

⁵⁶ http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapital_ny3.pdf.

At present, FI does not have the powers of authority to introduce such requirements to counteract financial imbalances. It is therefore important that the question of FI's powers of authority does not stop with the right to introduce an amortisation requirement. FI's possibilities to take measures with regard to the broader task of counteracting financial imbalances with the aim of stabilising the credit market should be made clearer. Here FI prefers that the Government amends legislation and introduces a general wording that granting credit should not contribute to the build-up of financial imbalances. Given such a general wording, one could also give FI powers of authority to decide, for instance, on the measures mentioned. It is also reasonable that the Government does not need to approve all regulation in this field, so that FI can quickly take necessary measures as required. At the same time, there are democratic reasons for measures that have far-reaching direct effects on individual households' finances ultimately needing to be approved by the Government.

Many of the measures for managing the risks linked to household indebtedness can have a negative impact on the economy in the short term, but are positive for stability in the longer run. The introduction of new measures is thus a balance between different objectives. It may also be difficult to predict the effects of various measures. It is therefore important to assess the measures taken and be prepared to adapt the measures so they are fit for purpose.

Essentially, households' indebtedness is to a large degree affected by the situation on the housing market. FI can to some extent counteract risks of household debt building up, but cannot solve all of the problems on the housing market. This requires measures from other policy areas. For example, better conditions are required for efficient use of the existing housing stock, where tax policy can play a major role through capital gains tax and property tax. Moreover, tax deductions for interest payments can affect households' preferences regarding their level of debt. Finally, measures to facilitate the construction process could contribute to an increased in new builds, which would counteract the housing shortage that is pushing up housing prices.

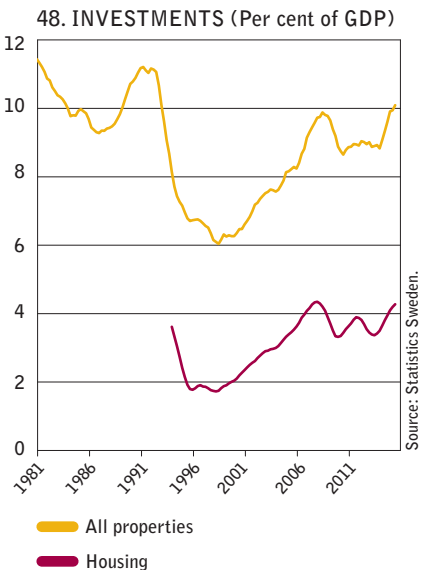
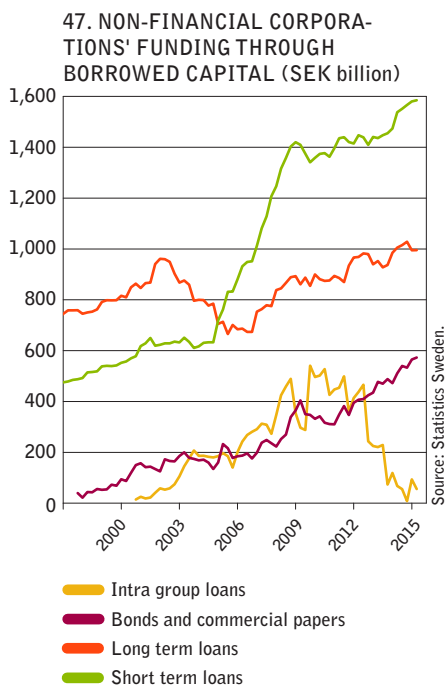


Note. Equity includes shares and other forms of ownership. Equity participations varies a lot in the short term since share equity is valued at market prices. Borrowed capital include loans, bonds and commercial paper. Pension rights, trade credit and other unpaid expenses are not included.

CORPORATIONS' DEBTS

Non-financial corporations finance their operations with equity and borrowed capital. Equity consists primarily of shares and internal funds, while borrowed capital includes loans from credit institutions and market borrowing via bonds and certificates (Chart 46). Choice of financing is affected by costs, risks and tax rules.

Different types of capital fulfil different needs at corporations, such as long-term borrowings for investments or short-term credit for managing cash flows. The need to borrow, and thus the level of indebtedness, therefore differs considerably between sectors. The supply of credit to companies is an important function of the economy. If disruptions arise, the companies' investments and other activities may decline and economic activity may therefore deteriorate. Indebtedness in the corporate sector also risks causing losses for the banks and other investors who lend money to companies if it is exaggerated and the companies ultimately experience problems in paying their debts. At present, companies' borrowing from Swedish banks is increasing by around 3 per cent a year (Chart 36).



At the outset of the 2000s, companies to a great extent replaced long-term loans with short-term loans (Chart 47). As a result of a shorter period for tying up capital, short-term loans can entail lower borrowing costs and therefore cheaper funding. At the same time, they involve a greater refinancing risk. Disruptions in the credit supply thus risk having a greater impact on companies. Another clear trend in recent decades has been an increase in borrowing using bonds and certificates.⁵⁷ The emergence of this market diversifies companies' financing, which makes them less dependent on banks. Companies thus become less sensitive to disruptions in the banking sector, but more sensitive to disruptions on the securities markets. As there are substantial costs for becoming established on the bond market and requires a substantial borrowing need, it is mainly large companies that finance themselves through bonds and certificates.

A large share of debts among non-financial companies have long been comprised of internal group loans, which do not pose the same risks to the financial system as other loans, because the relationship between the lender and borrower is not the same as in e.g. a bank loan.⁵⁸ Intragroup loans increased over a long period of time because many corporations use them for tax planning purposes.⁵⁹ However, in 2009 and 2013 the Government introduced rules that limited the tax deductions for interest paid on internal loans, which have turned the trend around.

Housing investment soon back at pre-crisis level

Property companies have a large financing need and are often of central importance in financial crises. Property companies take on risk during the production phase. This risk arises if the property is sold on but still remains to a large degree if ownership remains, even if the property is then generating income. In Sweden, investments in housing rose in the decades prior to the most recent financial crisis and have since then remained at a relatively stable level (Chart 48). Compared with many other European countries, housing investments in Sweden have not fallen. This could be explained by the initially low level and by a rapid increase in the population.

Housing investments increased by 20 per cent in 2014, but nevertheless the investment volume was somewhat lower than in 2007. Housing investments are expected to increase further in the coming period.⁶⁰ A substantial rise in housing investment that cannot be explained by an underlying need could be a sign of a non-sustainable development and thereby indicate an increased risk of a fall in housing prices.⁶¹ For instance, housing investment was high in the United States, Spain, Denmark and Ireland, which all perceived large falls in housing prices during

57 Bonthron (2014), The development of the Swedish market for corporate bonds, Economic Commentary no. 7, 2014, Sveriges Riksbank

58 If such loans had not been consolidated in the statistics, the liabilities of non-financial corporations would have amounted to 125 per cent of GDP instead of 90 per cent of GDP, see European Commission (2015), Country Report Sweden, Commission staff working document, SWD (2015) 46 final.

59 Blomberg et al. (2012), Tax planning may have contributed to high indebtedness among Swedish companies, Economic Commentary no. 3, 2012, Sveriges Riksbank.

60 National Institute of Economic Research (2015), The Swedish Economy, August 2015.

61 National Institute of Economic Research (2013), House prices and home building – an international perspective, The Swedish Economy December 2013.

the most recent crisis. But this does not apply to all countries, and it is difficult to say whether it is a general correlation. In Sweden, housing investments have been low for a long period of time and the underlying need for new housing is considerable, and has moreover become even higher as a result of the substantial immigration, which can indicate a lower probability of a large fall in housing prices.

No signs of imbalance in the corporate sector at present

At present, FI sees no clear signs that extensive imbalances have built up in the corporate sector. However, the exceptionally low interest rates could lead to exaggeratedly optimistic business decisions that may later prove to be unprofitable. This could mean that vulnerabilities build up in certain sectors. Good growth in the Swedish economy (see the chapter The economic situation) counteracts the risks, but if the economy were to suffer a substantial fall in economic activity, there is a risk that some companies would suffer problems. A severe disruption to the financial system, that affects the supply of credit in the economy, could have a negative effect on Swedish companies. This could, for instance, occur if investors changed their view of risk and this meant that risk premiums rose rapidly and substantially (see the section Risks that could threaten financial and economic stability in the chapter The economic situation). The probability of such a scenario is assessed as low at present, however, and companies' increasingly diversified funding can comprise a counteracting factor. A significantly higher future housing construction could increase vulnerability in the property sector. However, the degree of vulnerability also depends on a number of other factors, including the way that housing investments are financed and whether there is a willingness to pay for the new homes in the household sector.

GLOSSARY

Actual maturity The actual time until repayment. Loans that are usually paid early or extended will have a shorter or a longer actual maturity than the contractual one.

Basel 3 A global framework established by the Basel Committee. The Basel 3 agreement for the banking sector contains regulations regarding capital adequacy, leverage ratio and liquidity regulation. In the EU these regulations are being implemented through the Capital Requirement Regulation (CRR) and the new Capital Requirements Directive (CRD 4).

Capital requirements Regulations about the minimum amount of capital a financial firm must maintain to conduct operations. The requirement is linked to the extent of the firm's risk-taking and should function as a buffer if losses arise.

Capital tied-up period The period of time remaining until a debt is to be repaid

Central counterparty A financial company that enters in as counterpart in financial transactions and takes over responsibility for meeting the obligations.

Certificate A financial product for trade in the money market issued by financial and non-financial companies. The certificate has a maturity of up to one year and is part of the companies' short-term financing.

Common equity Tier 1 capital Denotes in principle equity, i.e. share capital and accumulated non-distributed profits, i.e. the capital that absorbs losses first.

Common equity Tier 1 capital ratio Relationship between common equity Tier 1 capital and risk-weighted assets.

Contractual maturity The contracted amount of time remaining until the payment of a liability falls due. It is the contractual maturity that states the period for tying up capital (See capital tied-up period). There are also liabilities and assets where the maturity is not defined.

Countercyclical capital buffer The countercyclical capital buffer is a new time-varying capital requirement with the purpose of managing systemic risks linked to the credit cycle, which denotes the variation of the credit market over time.

Credit gap An indicator that shows how much the private sector debt in relation to GDP deviates from an estimated long-run trend.

European Banking Authority (EBA) The authority responsible for regulating banks in the EU.

European Securities and Markets Authority (ESMA) The authority responsible for the regulation of the securities market in the EU.

Fixed interest rate period The period of time for which the interest rate on a debt or asset is fixed.

Interbank rate Interest on loans between banks without collateral. The Swedish interbank rate is known as Stibor (Stockholm Interbank Offered Rate) and used as a reference rate in, for instance, derivative contracts and loans at variable interest rates issued in SEK.

Internal ratings models (IRB models) Calculation models banks develop and, after receiving permission from FI, use to calculate how much capital is needed to cover various credit risks.

LCR – Liquidity Coverage Ratio A requirement expressed within the framework of the new capital requirement regulations (CRD 4) requiring a bank to have sufficient liquid assets to honour its short-term obligations during a “stressed” 30-day period.

Leverage Ratio Measure that states the extent of equity in relation to the bank’s total assets and commitments outside of the balance sheet. The measure is used as a supplement to the risk-based capital adequacy requirements. There is an ambition for leverage ratio requirements to be introduced in the EU in 2018.

Liquidity risk The risk of not being able to honour payment obligations on the due date without the cost increasing considerably. Liquidity risk in financial instruments is defined as the risk that a financial instrument cannot immediately be converted into liquid funds without declining in value. This risk is often called market liquidity risk.

Mortgage cap The mortgage cap came into effect on 1 October 2010 through FI’s general guidelines FFFS 2010:2. These guidelines state that a loan collateralised by a home may not exceed 85 per cent of the market value of the home.

Net commission income The difference between income and costs from taxable services.

Net wealth (households) The difference between households’ assets and liabilities.

OTC (Over the Counter) Denotes financial products (such as derivatives) that are traded directly between buyers and sellers outside of a stock market or multilateral trading facility.

Own funds A financial company’s own funds consist of CET 1 capital, other Tier 1 capital and Tier 2 capital. Together, these comprise the company’s total own funds.

Pillars 1, 2 and 3 The Basel 3 capital adequacy regulations are divided into three pillars. Pillar 1 is the minimum capital requirements for credit risks, market risks and operational risks that are calculated using explicit calculation rules. Pillar 2 entails the supervisory authority identifying risks and assessing the risk management from a broader perspective. This can result in an increment to the capital requirements calculated under Pillar 1. Pillar 3 defines various transparency requirements, for instance, covering information on the bank’s own internal processes for evaluating the bank’s total capital requirement (Pillar 2).

Quantitative easing A method used by central banks to stimulate the national economy. This can occur by means of the central bank buying financial assets from banks and other private firms.

Risk premium The extra return required by investors in compensation for taking a higher risk.

Risk weight The calculation of a bank’s capital adequacy requirement is based on the size of the so-called risk-weighted assets. To calculate the risk-weighted assets, the value of each asset, such as a mortgage or corporate loan, is multiplied by a risk weight. The risk weights vary between the various assets based on how large the credit risk for each asset is judged to be. A high risk weight means there is a greater risk than a low risk weight. By combining the value of all of a bank’s assets, weighted at the different risk weights, it is possible to produce a single value for the risk-weighted assets in the bank.

Tier 1 capital The sum of core Tier 1 capital and Tier 2 capital. Tier 2 capital includes perpetual subordinated loans with particular special charac-

teristics. A subordinated loan is a loan without special collateral and with poorer priority rights than a bond loan, which means that in the event of bankruptcy the holder is paid less after other creditors but before the shareholders.



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