

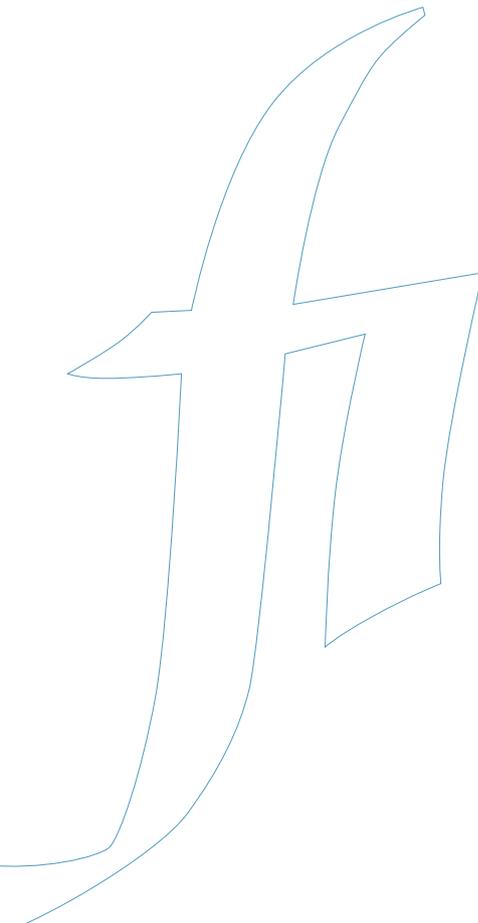


FINANSINSPEKTIONEN

Stability in the Financial System

26 MAY 2016





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FI and financial stability

Financial stability report from FI

One of Finansinspektionen's (FI's) primary responsibilities is to promote a stable financial system. The Government has therefore given FI the task of reporting its assessment of financial stability and potential financial imbalances in the Swedish economy twice a year. *Stability in the Financial System* describes the vulnerabilities and triggers that could threaten the stability of the financial system in Sweden. The report also analyses potential measures and measures that have been taken to reduce these vulnerabilities and risks.

The financial system is important – but vulnerable

An efficient, stable 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, and this affects both individual firms and markets as a whole. A dip in confidence can induce firms to fail or markets to stop functioning. The different parts of the financial system are closely interlinked, which means that problems arising in one part of the system could quickly spread to other parts.

Financial stability and imbalances in the credit market

Financial stability refers to the ability of the financial system to maintain its core functions – making payments, transforming savings into financing and managing risk – even under unfavourable circumstances. The system should have a good resilience to shocks.

However, the financial sector can create and aggravate economic problems even if the core functions are maintained and the financial system as such is not experiencing a crisis. For this reason, FI's responsibilities were expanded in 2013 to include the objective of counteracting imbalances in the credit market in addition to its traditional objective of safeguarding the stability of the financial system.

Measures require evaluation of advantages and disadvantages.

FI introduces measures that increase the resilience of the financial system and the real economy. Even if the measures are positive for the economy as a whole, they sometimes have negative side-effects, for example high costs and restricted access to important financial services. Decisions to implement measures therefore often require balancing stability needs against those of efficiency.



Erik Thedén, Director General

Summary

FI makes the assessment that the resilience of the financial system in Sweden is satisfactory, but vulnerabilities remain. The Swedish banks have buffers, but they fund themselves in capital markets, which makes the banking system vulnerable to shocks to confidence. Liquidity in systemically important securities markets has not changed in recent years.

House prices are not rising at the same rate as before, but household debt is continuing to rise rapidly. Highly indebted households are primarily a risk for economic stability since they potentially could sharply reduce their consumption and thus exacerbate a future economic downturn. FI is now implementing an amortisation requirement, and a loan-to-income cap could prevent the risks associated with household indebtedness from continuing to rise.

Economic growth in Sweden is strong. Good export growth and strong domestic demand are driving growth, and unemployment is falling. Demographics as well as income are showing strong growth, and low interest rates are helping keep house prices up and contributing to rising indebtedness among households. Sweden is currently experiencing a unique combination of strong growth, rising resource utilisation and extremely low interest rates, which gives rise to risks that are difficult to predict.

The Swedish financial system and the Swedish economy are very dependent on international developments, which is a cause for concern since global economic development is currently dealing with a number of issues. The economic recovery in Europe continues to progress slowly, at the same time as demand has slowed in many growth countries.

Because the global economy has slowed, it has become more likely over the past six months that the Swedish financial system will be negatively affected by external shocks. These shocks could take the form of, for example, the exit of the UK from the EU, a banking crisis in Europe or a strong correction in prices of shares and other risky assets.

A well functioning financial system should be able to take on shocks regardless of whether they come from identified risks or unforeseen sources. A central goal of financial regulation and supervision is therefore to ensure that systemically important firms and markets in general have good resilience. Since capital provides a firm with the capacity to withstand losses, whatever the cause, much of the focus of FI's stability-related work is to ensure that firms have satisfactory capital buffers. The banks' ability to handle shocks to the channels from which they secure funding is also important. FI is therefore also working with liquidity and financing.

RESILIENCE OF THE BANKS IS SOUND

Most Swedish banks have satisfactory resilience to losses and are judged to have sufficient capital to maintain critical services even under more turbulent conditions. FI would also like the banking system to hold more capital and has therefore decided to raise the countercyclical capital buffer and apply stricter requirements on how banks use their internal models.

The major banks currently have solid access to cheap funding in both SEK and the global reserve currencies, EUR and USD. The funding the banks receive from the general public is covered by the deposit insurance scheme and is stable. The funding that banks receive from professional investors is not covered by deposit insurance and may be more difficult to renew in a crisis situation. If investors are not able or willing to continue providing funding, this may cause problems for the banking system. FI has observed during the past six months that the banks continue to have easy access to funding via the securities markets, despite problems in the major European banks.

The Bank Recovery and Resolution Directive went into effect on 1 February of this year. This new directive provides a framework for handling failing banks without affecting financial stability. This handling process is called “resolution”. The resolution regulations also aim to decrease the risk of the default even occurring. In the event that a crisis does still occur, resolution also provides a method for avoiding a situation where the state must intervene using public funds to keep the operations of important banks afloat.

Important tools during a resolution proceeding are write-downs and conversion of liabilities (“bail-in”). In the event that a bank fails, the aim of the tool is to achieve the same effects for owners and lenders as a bankruptcy in a normal firm. If lenders carry the losses, the banks face lower incentives and opportunities to take risks that are too large. In order to ensure that the banks have sufficient buffers, the authority responsible for resolution (in Sweden the National Debt Office) requires banks to issue a certain amount of securities that can be written down in the event of a resolution. These requirements interact with the capital requirements FI establishes in its capacity as a supervisory authority. The calibration of these two authority requirements needs to be applied using a holistic approach to ensure that the banks have financing that serves both stability and efficiency.

Nordea is planning to restructure its subsidiary banks in Denmark, Norway and Finland to branches of the Swedish parent bank, Nordea Bank AB. The aim is to simplify governance by adapting the structure to match how the Group is currently run operationally. Implementation of the transition to a branch structure is planned for the start of 2017 and has been approved by the Board of Directors of FI. Authorisation is also required from the supervisory authorities in Denmark, Norway and Finland before the transition may begin.

FI views the transition to a branch structure to be potentially positive from a stability perspective. It enhances the bank’s ability to recover from a crisis since capital and liquidity can be freely transferred between different parts of the operations. Furthermore, it enhances the possibility to conduct an orderly resolution proceeding in the event of a default, since the Swedish National Debt Office becomes the resolution authority for a large part of the banking operations. This will speed up and simplify the decision-making process.

MARKETS ARE FUNCTIONING SATISFACTORILY

The securities and derivatives markets that financial firms (and other firms) use to manage market risks and funding are functioning satisfactorily. Well functioning markets are a prerequisite for preventing problems in one firm from spreading to other firms and being amplified in the financial system.

In the market for covered bonds, liquidity has more or less remained the same in recent years. Covered bonds hold a unique position through their link to both the banks' funding and household indebtedness. Problems in the covered bonds market also introduce contagion risks into other parts of the financial system since funds and pension managers have large holdings and banks own each other's bonds.

During previous periods of financial turbulence, life insurance companies have sold shares and purchased bonds with long maturities and thus exacerbated downturns in share prices and market rates. This has not happened in recent years and the assessment is that it will not happen in the near future, either. Changes to the regulations have meant that insurance companies are not facing as strong incentives to change their portfolios during periods of financial turbulence.

However, the changes to the regulations are not all positive. The new regulatory framework may result in life insurance companies which are deficient in their risk management taking measures much too late, which in turn may result in them having problems meeting their guaranteed pension commitments in the long run. For example, firms could continue to take risk even if they no longer have any risk capital from an economic perspective.

HIGHLY INDEBTED HOUSEHOLDS ARE VULNERABLE

Loans make it possible for households to even out their consumption over their lifetime and to offset more temporary differences in income and expenses. Loans also serve as funding for non-financial firms that create jobs and growth, but loans and indebtedness also entail risks.

House prices are increasing slower than in 2015, but given that house prices have increased sharply over a period of several years, there is a risk that they may also retract sharply. Even though growth in house prices has slowed, household debt is continuing to rise rapidly, as is the share of households with high debt in relation to their income.

Household debt has risen faster than income for several years. Debts consist primarily of mortgages. Households also have large assets and a high level of savings and are judged to be able to make their mortgage payments even in the event of an economic downturn or a rise in interest rates. The risk that the banks will post major losses on their mortgages is therefore limited.

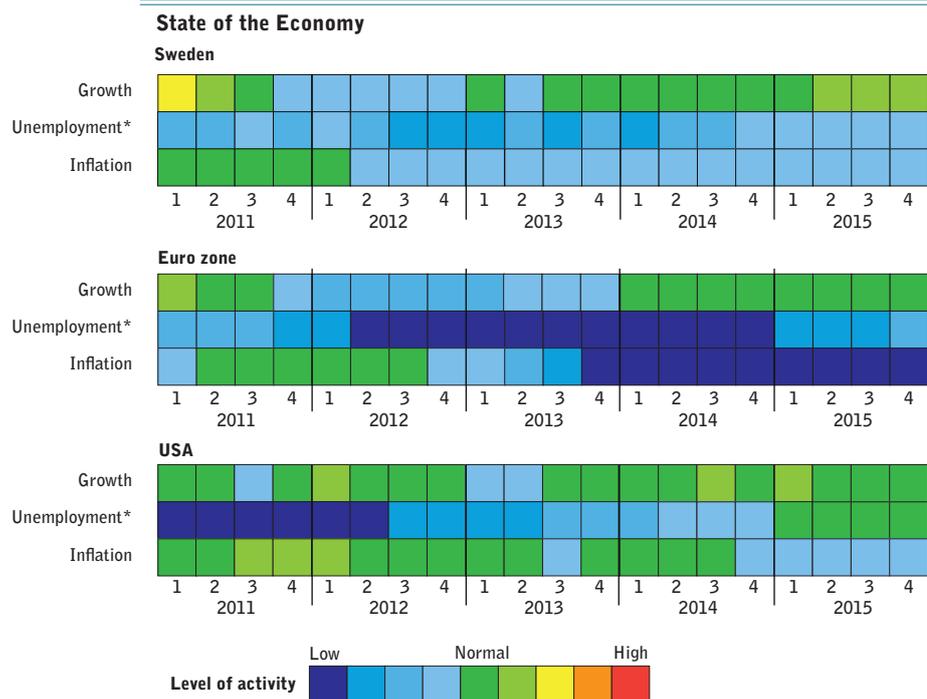
Highly indebted households are therefore primarily a risk for economic stability since they can sharply reduce their consumption in the event of a drop in house prices or other shocks and thus exacerbate an economic downturn.

Since 2010 FI has been implementing measures to decrease the risks associated with the credit market. The mortgage cap limited the size of a loan in relation to the market value of the property, which slowed the rate at which debts were growing. The amortisation requirement that will be implemented on 1 June also limits indebtedness in the future and has a slight cooling effect on the housing market.

FI would also like to implement a loan-to-income cap to further prevent the macroeconomic risks associated with household indebtedness from increasing more, but it currently does not have the powers to implement such a measure. It is therefore important that FI be allocated such powers in the near future.

State of the economy

Global economic development is currently very uncertain. The western world, and the EU in particular, continues to have problems getting back to paths of stable growth. In emerging economies, economic growth has slowed considerably. Economic growth in Sweden is stronger than in other developed countries. Fluctuations on the securities and commodities markets is a sign of the uncertainty surrounding global economic growth.



* Low unemployment means high level of activity.

The development in the real economy is important for financial stability at the same time as financial stability is a prerequisite for economic growth. Economic growth is dependent on a functional lending system that allows firms to borrow to make investments and households to borrow to distribute their consumption and expenses over time. If growth in the real economy is worse than expected, this has an impact on the financial sector. Extremely large shocks in the real economy could threaten financial stability.

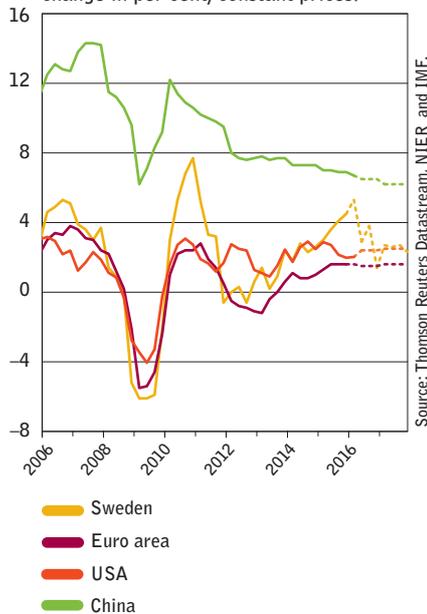
Sweden is a small, open economy where economic growth is largely dependent on the economic activity in other countries. The financial system in Sweden is also closely linked to the global financial markets and there is a risk that shocks on these market will spread to the Swedish economy.

SWEDEN STRONGER THAN OTHER DEVELOPED COUNTRIES

The start of the 2016 has been tinged by more conservative forecasts for the global economy.¹ Recovery in developed economies is progressing slowly. In emerging economies, economic growth has noticeably slowed.

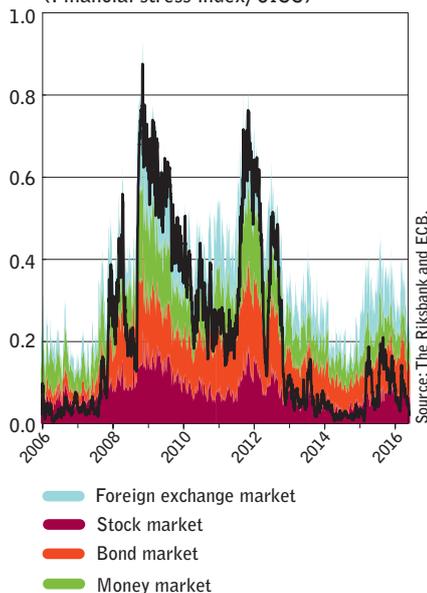
¹ World Economic Outlook, April 2016, International Monetary Fund and Global Interim Economic Outlook, February 2016, OECD.

**1. SWEDISH ECONOMY
RELATIVELY STRONG** (Annual
change in per cent, constant prices)



Note. Dashed lines are forecasts. The forecast for Sweden is from NIER in March and the forecasts for the euro area, US and China are from the IMF in April.

**2. HIGHER FINANCIAL STRESS
IN THE BEGINNING OF 2016**
(Financial stress index, CISS)



Note. The CISS stress index was developed by the ECB. A value of 1 indicates a historically high level of stress and a value of 0 indicates a historically low level of stress.

Recovery in the euro zone is slow. Expected growth for the euro zone is 1.5 per cent in 2016 and 1.6 per cent in 2017. The strongest driver behind this growth is domestic demand via household consumption. In the USA, the pace of the recovery has slowed, and business confidence indicators are indicating a dip in expectations about the future. Economic growth is expected to be 2.4 per cent in 2016 and 2.5 per cent in 2017.²

Growth in China slowed in 2016, which slows global economic activity and puts pressure on commodity prices. The uncertainty in China is linked in part to its announced political reforms, since it is not clear how these will affect economic growth.

Surrounded by countries with wavering economic forecasts, the Swedish economy represents a positive exception. Economic growth has been considerably stronger than in the rest of the western world, including its Nordic neighbours. Household consumption and investments, in particular investments in housing, contributed to stronger economic growth in Sweden than in other countries. According to the National Institute of Economic Research (NIER), Swedish GDP will grow by 2.5 per cent in 2016 and 2.3 per cent in 2017 (Diagram 1). Unemployment is decreasing thanks to the strong economic growth and will fall to 6.3 per cent in 2017. After a long period of low resource utilisation in the economy, this figure is considered to have been neutral at the start of 2016 and is expected to continue to rise.³

At the same time, the Swedish economy is closely linked to other countries. Continued weak development in other countries represents a potential risk for the Swedish economy and, by extension, financial stability.

FINANCIAL MARKETS

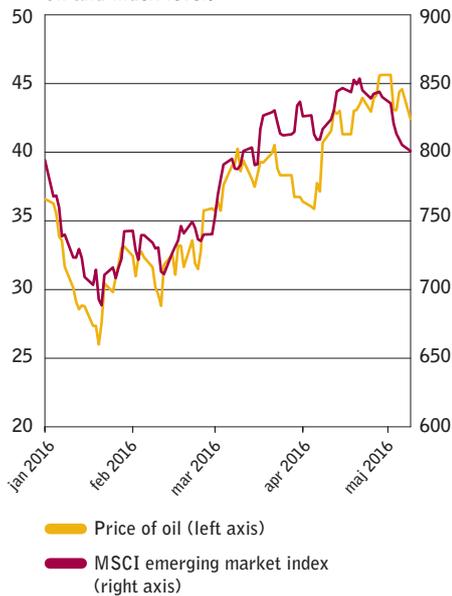
Weaker global growth forecasts have created uncertainty surrounding the profit growth of firms. This uncertainty has manifested itself in a turbulent and volatile stock market in 2016. However, indicators for financial stress, such as the CISS index, have stabilised during the spring after a noticeable upswing at the beginning of the year (Diagram 2). The covariation between the developments on the financial markets and the commodity markets, in particular the oil market, has been high (Diagram 3). The commodity markets are largely driven by expectations about future economic development.

In Europe, concern about the status of the banks has pressed the price down on both their shares and some of their bonds. These concerns apply to both low profitability and low capital levels, which in turn affect the possibility to make payments to investors. Many European banks find it difficult to be profitable when economic growth is weak and borrowers have a hard time making their payments. Low interest rates also put pressure on profitability. Low equity prices are one indication of economic problems but also have the practical consequence of making it difficult for the banks to strengthen their capital position through issues.

2 World Economic Outlook, April 2016, International Monetary Fund.

3 The Swedish Economy, March 2016, the National Institute of Economic Research.

3. STOCK EXCHANGES IN EMERGING ECONOMIES DEMONSTRATES COVARIATION WITH THE PRICE OF OIL (Price in USD per barrel of Brent oil and index level)



Source: Thomson Reuters Datastream.

4. 10-YEAR GOVERNMENT BOND RATES REMAIN AT LOW LEVELS (Per cent)



Source: Thomson Reuters Datastream.

INTEREST RATES ARE EXCEPTIONALLY LOW

During the beginning of 2016, already low interest rates have fallen even lower. The Riksbank lowered the repo rate to -0.5 percent in February, in part in response to the continued expansive monetary policy that is being conducted by central banks in other countries. In March, the European Central Bank (ECB) lowered the policy rate to zero percent. After the Federal Reserve (Fed), the US central bank, raised the policy rate in December 2015, the economic indicators in the USA were lowered and the expectations of additional interest rate increases decreased. The interest rates in developed countries will probably continue to be low for the foreseeable future.

In addition to the lowering the policy rates, the Riksbank and the ECB are purchasing large volumes of assets in the securities markets. These purchases are pressing down market rates with longer maturities but are also affect other prices, such as foreign exchange rates. Market rates have continued to decline in 2016 after a slight upswing at the end of last year (Diagram 4).

The low interest rates can introduce risks to the financial system. Investors with set return targets need to take more risk, which means higher risks for individual investors but also a risk that price bubbles will form. If and when the interest rates rise, this could trigger a fall in prices. The higher demand for risky assets has also reduced the interest rate spread between secure and risky fixed-income investments for a longer period of time at the same time as the interest rates have fallen (Diagram 5).

SHOCKS THAT MAY POSE A THREAT TO STABILITY

Financial stability is threatened by shocks that expose inherent weaknesses. FI is primarily working to increase resilience through measures that strengthen these weaknesses. The shocks often come from external influences and can be difficult to predict and prevent. Several possible shock scenarios are described below.

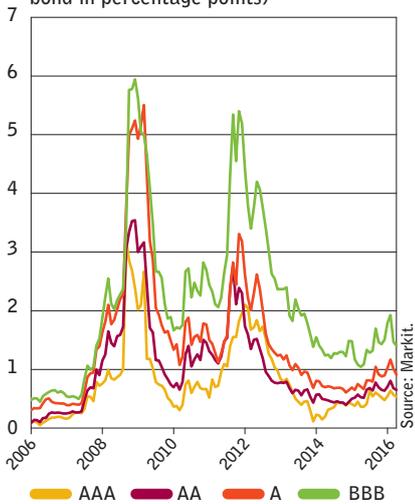
United Kingdom decides to leave the EU

On 23 June 2016, a referendum will be held in the United Kingdom to determine whether the country should withdraw from the European Union. The risks associated with the referendum can be divided into two areas: uncertainties on the financial markets in conjunction with the referendum and the actual financial and real economic consequences if the people of the United Kingdom vote to leave the EU. The actual economic consequences in the event of a secession are difficult to predict since the conditions for the United Kingdom outside of the EU are uncertain. A potential reduction in trade and investment flows between the United Kingdom and the EU could have extremely negative effects on both economies. For the banking system in the United Kingdom, which is already exposed, a secession from the EU in a worst-case scenario could be the shock that triggers a deeper crisis.

A European banking crisis

Systemically important banks in the United Kingdom and Germany suffered losses in 2015 and large parts of the European banking sector have low profitability (see Operations and capital of the banks). The losses from non-performing loans remain at elevated levels. The extremely low interest rate levels and the drawn-out period with low interest rates put pressure on the banks' ability to earn money. A deeper

5. CREDIT RISK PREMIUMS FALL WHEN INTEREST RATES FALL
(Deviation from German government bond in percentage points)



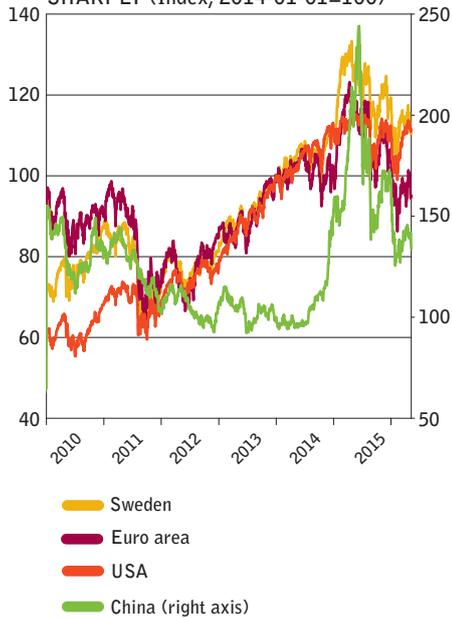
Note. Refers to the spread between interest rates on credit rating-grouped baskets of European corporate bonds and on German 5-year government bonds.

crisis in the European banking system would quickly have extreme, negative consequences on the financial markets as well as for Sweden.

A price correction for risky assets

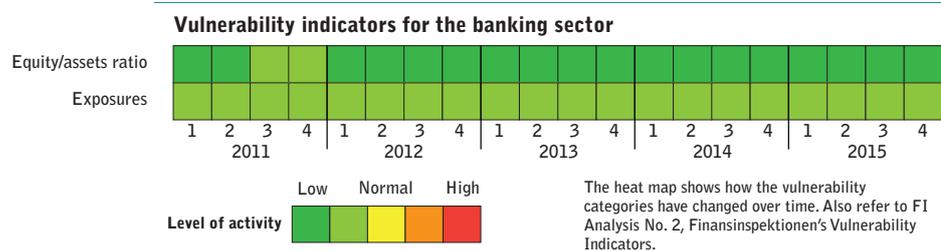
The prices for risky assets have increased sharply following the global financial crisis in 2008 (Diagram 6). The upswing in prices does not necessarily mean that higher-risk assets are overvalued, but the longer the period that prices rise the greater the probability of a downward adjustment. The low interest rates are part of the problem, and there is a risk that prices will correct when the conditions change. There has been a slight correction in the price level over the past year.

6. SHARE PRICES INCREASED SHARPLY
(Index, 2014-01-01=100)



Operations and capital of the banks

FI makes the assessment that Swedish banks continue to demonstrate satisfactory resilience. The banks lie well above FI's current capital requirements. Since the banks hold a buffer in excess of the requirements, FI makes the assessment that they will be able to meet the raised capital requirements that are about to enter into force from stricter requirements on internal models and a higher countercyclical buffer. The strength of the banks' capital also means that they are well-equipped to carry any future credit losses. As of 1 February 2016, there is a regulatory framework in place to manage banks that are experiencing serious problems, which decreases the risks for the taxpayers.



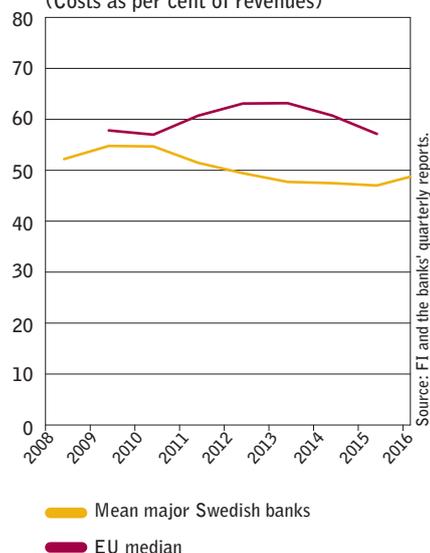
Banks play a central role in the Swedish financial system. They provide the economy with loans and make payments, two functions that are fundamental for a functioning economy. If the banking system for some reason were not able to continue to provide these services, the economic costs could be high. In order to be able to continue to provide these fundamental functions in the financial system even during times of crises, banks must have sufficient resilience to handle any shocks. Resilience at the banks also decreases the risk that problems will spread to other parts of the financial system.

It is easier for a well capitalised bank that has stable earnings to not only carry credit losses but also obtain ongoing market funding for its assets. Resilience, however, requires that a bank also have liquid assets in order to be able to handle periods when funding conditions are more difficult (see Banks' funding and liquidity risks). It is also important for banks to have proper governance, risk management and control.

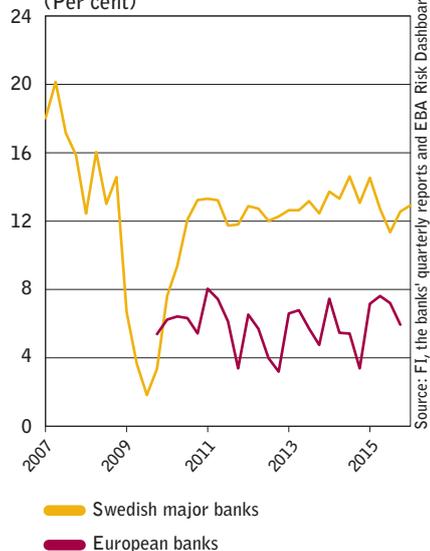
LARGE BANKS WITH HIGH PROFITABILITY

The Swedish banking system is large but it is also highly integrated. The four major banks dominate the market. Their total assets correspond to approximately 85 per cent of all the assets of all Swedish banks and around 400 per cent of Sweden's GDP. FI considers the four major banks to be systemically important. Problems arising in any of these banks could potentially quickly spread to other participants in the financial markets. In order to enhance the resilience in the Swedish financial system and protect stability, FI places particular focus on its supervision of the four major banks. FI also requires these banks to hold more capital than other banks and have liquidity buffers comprised of high-quality assets.

7. THE MAJOR SWEDISH BANKS' COSTS ARE LOW (Costs as per cent of revenues)



8. MAJOR SWEDISH BANKS HAVE HIGH RETURN ON EQUITY (Per cent)



Note. Unweighted averages for the major Swedish banks and median value for 55 European banks. For

Nordea to transform subsidiaries into branches

Nordea has been granted authorisation to change its legal structure. The bank plans to transform its subsidiary banks in Denmark, Norway and Finland into branches of the Swedish parent company, Nordea Bank AB. The transformation to a branch structure is planned to go into effect as of the beginning of 2017. This change also requires authorisation in Finland, Norway and Denmark, but the concerned authorities in these countries have not yet announced their decisions.

From a group perspective, Nordea's operations basically will not change. Risks related to lending, trading or financing do not change, and the legal structure will become more aligned with the current operational control of the bank. FI therefore makes the assessment that the new structure will improve the conditions for internal governance and control. The new structure will also improve the conditions enabling Nordea to ensure compliance with the rules since it will be easier to establish unified procedures in all areas of its operations. The mergers are also expected to streamline processes and introduce cost savings, for example within administration and reporting.

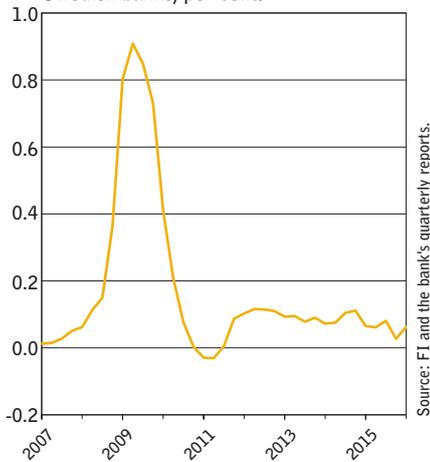
The actual implementation of the mergers may lead to a temporarily elevated operational risk, which FI will take into consideration during its annual Supervisory Review and Evaluation Process.

FI makes the assessment that the mergers will not increase the risk of a serious crisis in Nordea Bank. If a crisis were to arise, the mergers improve the conditions for effective management of the crisis. The Swedish state's formal responsibility for supervision, resolution, deposit insurance and liquidity assistance will increase, but at the same time so will its control and freedom of action in the event of a crisis, thus improving the conditions for a more efficient recovery or resolution. The probability that the Riksbank will need to provide liquidity assistance in foreign currency will increase slightly, but it is likely that the Riksbank would have to take responsibility for assistance even under the current subsidiary bank structure. FI therefore makes the assessment that the mergers will not increase the risk to financial stability.

FI is currently responsible for the supervision of the Nordea Group, and the supervisory authorities of the Host States are responsible for the direct supervision of the subsidiary banks. If the change is implemented, FI's direct supervisory responsibility will also include the operations of the branches. FI will thus take over responsibility for the supervision of Nordea's operations in Finland, Norway and Denmark from the local authorities.

The focus of FI's supervision will not materially change. FI has long been conducted its supervision at the consolidated level and focused on all of the Group's risks. The capital requirements, liquidity requirements and supervision planning are already based on a Group perspective, and a supervisory college for Nordea has therefore been created with the supervisory authorities from the other countries. The cooperation within this college will continue to play an important role, in part because Nordea has mortgage institutions in the other countries that will remain under the supervision of the Host States but also because the branches will continue to be systemically important in the other countries. However, because FI will become responsible for the supervision of the entire banking operations, it will take on a stronger position in the college after the restructuring.

9. MAJOR SWEDISH BANKS HAVE LOW CREDIT LOSSES (Average, major Swedish banks, per cent)



Source: FI and the bank's quarterly reports.

Note. Credit losses as a per cent of total lending to the privat and public sectors. Unweighted average.

Banks' earnings still stable

Earnings in the Swedish banking sector continue to be strong. One factor behind this is that growth in Sweden has been strong. Strong growth combined with low interest rates has contributed to households and firms opting to borrow (see State of the economy and Indebtedness and the Swedish economy). Strong economic growth also improves the payment capacity of borrowers, which in turn decreases the risks for credit losses.

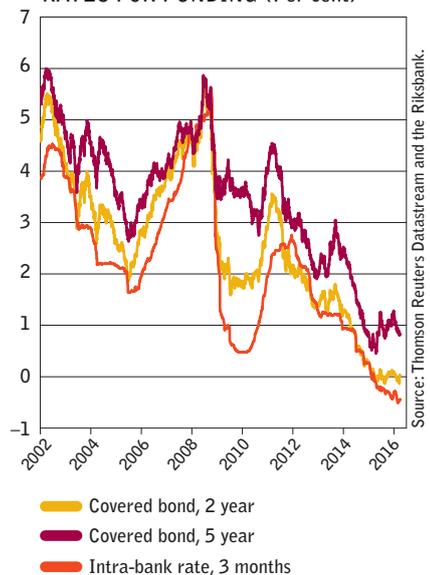
Higher income in relation to expenses has resulted in higher aggregate profits for the major banks (Diagram 7). Compared to European banks, the Swedish banks have a high return on equity (Diagram 8). The credit losses of the major banks continue to be low and have held steady at the same level for the past five years (Diagram 9). Low credit losses and high profitability mean that Swedish banks continue to be very resilient.

Stable earnings contribute to a stable financial system, as they reinforce the banks' resilience to shocks. However, there is a potential conflict between FI's assignment of promoting stability in the financial system while at the same time protecting consumers. Earnings that are too high could be a sign of low competition. FI is working to improve transparency, which can improve competition on the consumer market, and achieve a balance between the interests of firms and consumers. FI therefore regularly calculates and publishes the banks' margins on mortgages, and has been able to determine that mortgage margins continue to be high.

Interest rates are exceptionally low

The Riksbank's repo rate is currently negative and ECB's policy rate is zero. The Swedish interest rates have thus been exceptionally low, which has meant that banks are funding themselves at record-low cost (Diagram 10). The interbank interest rate and interest rates on covered bonds, which have a large influence on the banks' funding, have declined as the Riksbank has lowered the repo rate. The interbank interest rates in foreign markets have also declined during the same period. Interest rates to households have largely stayed the same since December for all maturities. However, lending rates to firms have continued to decline over the past six months. The spread between the interest rates on large and small corporate loans, which reflects the interest rates on loans to small and large firms, has also decreased and is currently very small (Diagram 11).⁴

10. BANKS HAVE LOW INTEREST RATES FOR FUNDING (Per cent)



Source: Thomson Reuters Datastream and the Riksbank.

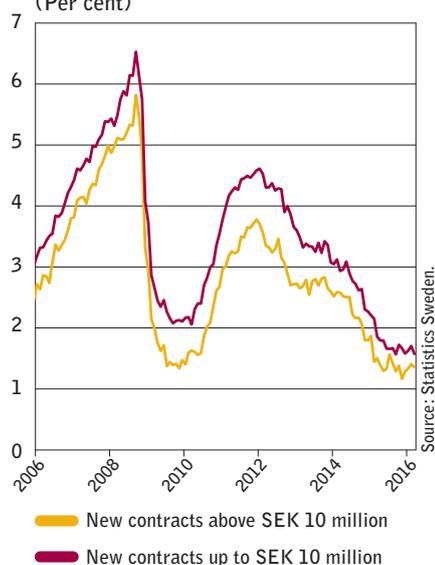
SWEDISH BANKS HAVE HIGH LEVELS OF CAPITAL

Capital adequacy requirements are meant to ensure that banks are holding sufficient amounts of capital in relation to their risks. Well capitalised banks are a prerequisite for a resilient, stable financial system.

The four major banks meet FI's capital requirements (Diagram 12). The marked increase in the banks' capital in relation to risk-weighted assets in recent years is primarily due to tighter capital requirements implemented by FI during this period. The banks have strengthened their capital somewhat compared to last quarter.

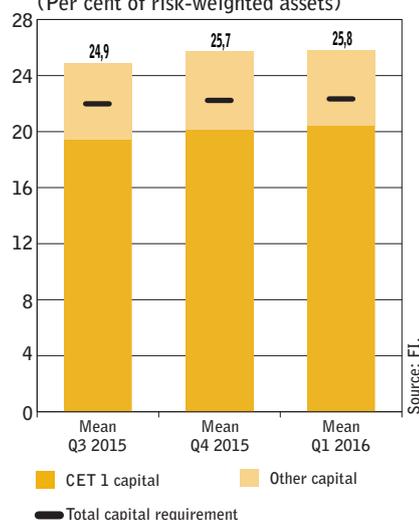
⁴ Assuming that large loans are mainly granted to large corporations and small loans are mainly granted to smaller corporations, the interest rate spread between small and large loans provides an indication of the difference in borrowing expenses between small and large corporations.

11. RECORD LOW LENDING RATES (Per cent)



Note. Refers to loans to both small and large non-financial corporations.

12. MAJOR SWEDISH BANKS WELL ABOVE THE CAPITAL REQUIREMENT (Per cent of risk-weighted assets)



Note. The capital levels refer to an average of the four major Swedish banks. FI has not yet established the total capital requirement for Q1 2016 for the major Swedish banks.

The major banks' total capital requirements amount to on average approximately 22 per cent of their risk-weighted assets (Diagram 12). These requirements are distributed relatively evenly between the minimum requirements, the requirements set out in Pillar 1 and Pillar 2 and buffers (for a review of the different parts of the capital requirement, see Large buffers increase resilience).⁵

The combined buffer requirements include the countercyclical capital buffer that is set by FI. Starting in June this buffer is set at 1.5 per cent and FI has decided to raise it to 2 per cent as of 19 March 2017.

In addition to the total capital requirement, the banks normally also hold a voluntary buffer. This allows banks to distance themselves even more from a situation where their own funds might fall below the total capital requirements. These buffers further enhance the banks' resilience (see Large buffers increase resilience).

Large buffers increase resilience:

Firms need equity to be able to conduct their business and cover losses. Regulations require banks and other institutions to hold enough capital to cover the risks that the bank's operations entail for the bank itself, the financial system and society at large. If there were no regulations, banks would tend to hold too little capital and let society and the state carry part of its risks.

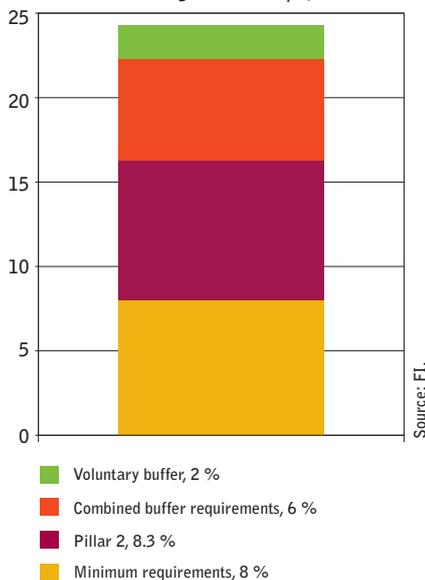
Minimum requirements and buffers

Capital requirements in principle can be divided into minimum requirements and buffers, and are comprised by the generally applicable Pillar 1 requirements and the discretionary (i.e. determined by the supervisory authority) Pillar 2 requirements. Minimum requirements and buffers are meant to fulfil in part differing purposes. A bank which does not meet the minimum requirement may not keep its authorisation to conduct business and must therefore be wound down or entered into resolution, which is an orderly method for being wound down. A high minimum requirement decreases the risk that lenders and taxpayers will suffer losses but does not decrease the probability that a bank will need to shut down its operations. The implementation of the Bank Recovery and Resolution Directive further decreases the risks for taxpayers by giving the state the possibility to convert certain liabilities into capital for a bank in resolution.

The regulation's capital buffers fulfil a partly different function than the minimum requirements. A bank may draw upon its buffers, although only given specific circumstances and restrictions. Large buffers make a bank more resilient in the event of losses, which in turn decreases the probability that it would fall below the minimum requirements and that problems would spread to other parts of the financial system. Large buffers are therefore good for the stability of both individual banks and the financial system.

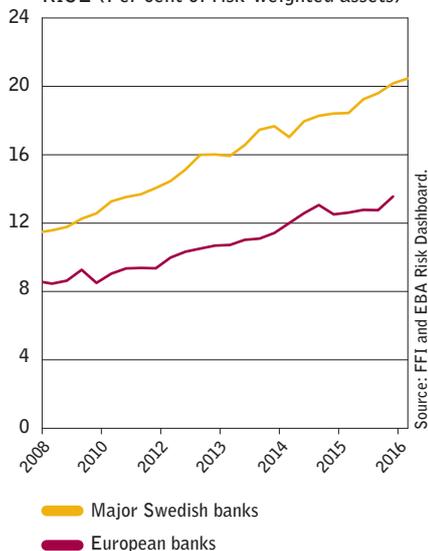
⁵ The buffers consist of the systemic risk buffer of 3 per cent, the capital conservation buffer of 2.5 per cent and the countercyclical capital buffer of 2 per cent. The countercyclical capital buffer that is decided by Finansinspektionen applies only to Swedish credit exposures. For the banks' foreign credit exposures, the buffer level that applies is the level that has been decided by each country's competent authority. See Capital Requirements for Swedish Banks, September 2014, Chapter 2 of FI Memorandum (Ref. 14-6528) for details about the buffer requirements. http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapitalkrav-svenska-banker-140910ny.pdf.

13. CAPITAL BUFFERS ABOVE THE MINIMUM REQUIREMENT (Per cent of risk-weighted assets, Q4 2015)



Note. Composition of own funds as a per cent of risk-weighted assets.

14. CET 1 RATIO CONTINUES TO RISE (Per cent of risk-weighted assets)



Note. Unweighted averages for major Swedish banks and median value for 55 European banks.

Banks want a voluntary buffer

The minimum requirements and the buffer requirements also contribute indirectly to enhancing resilience and financial stability. Under the current risk-based capital requirements, a bank must hold more capital if it takes greater risks. Banks also want to hold a voluntary "management buffer" in addition to the requirements of the regulations in order to avoid finding itself in violation of the regulations due to regular fluctuations in capital requirements and the value of assets and liabilities.

The size of this voluntary buffer is a balance between return and risk. A bank will often not want to hold more capital than what is absolutely necessary. The more capital a bank is holding, the lower its return on equity. But banks also do not want to find themselves in a situation where unexpected losses and changes in market value put them in violation of the regulations. The larger the voluntary buffer, the lower the probability that the bank will be subject to restrictions from FI. Just like with capital buffers, financial stability benefits if banks hold a large, voluntary buffer.

Combined buffer requirements in Pillar 1

The Basel III regulations specify a number of Pillar 1 buffer requirements. A bank may fall below the buffer requirements, but only for a limited period of time. If a bank's own funds fall below the combined buffer requirement, FI requires the bank to submit a plan for how it will restore its capital. In practice this means that FI is able to demand that a bank take measures to quickly restore its capital. Normally, FI does not make decisions about Pillar 2 (see below), but if a Pillar 2 decision were to be made, falling below the buffer requirements would lead not only to a requirement on a capital recovery plan but also to automatic restrictions with regard to dividends, bonuses and coupon payments that the bank may make.

Pillar 2 – a buffer under FI's discretion

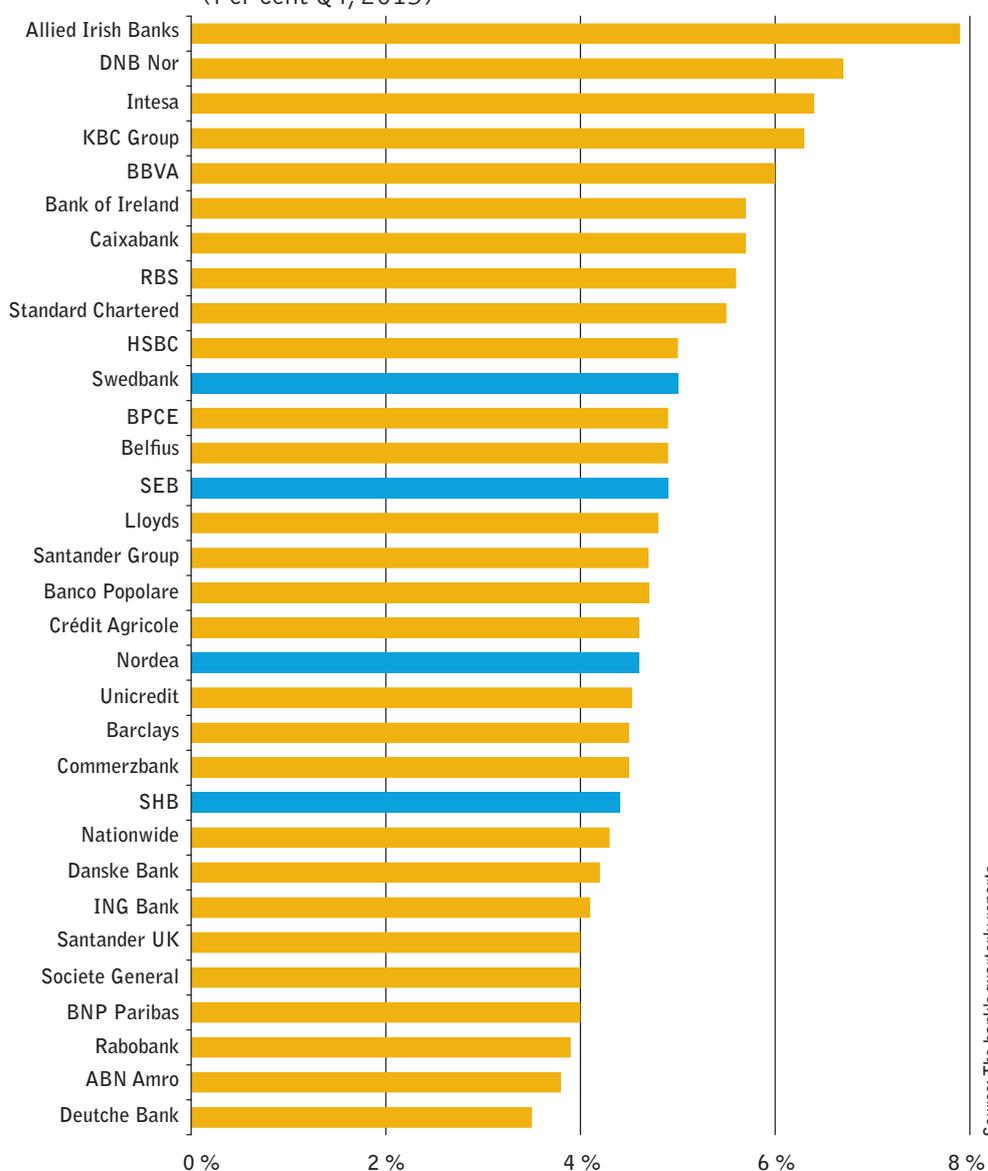
The Pillar 2 requirement is an individual requirement and should cover risks that are not fully captured by the regulation's minimum and buffer requirements. This may mean a higher capital requirement for risks that are not at all covered by Pillar 1, a risk that is partly covered by Pillar 1 or an additional buffer for risks to which the bank exposes the financial system. Both the level of the Pillar 2 capital requirement and the consequence of falling below this level are determined with discretion by FI and depend on the circumstances at any given point in time. If a firm is under severe financial stress, its risk profile can change in a short space of time. For example, certain risks included in the assessment of the Pillar 2 basic requirement might have materialised, which might mean there are no longer grounds for requiring the firm to hold capital for them. Large parts of the Pillar 2 capital requirements, therefore, can be viewed in practice, and under certain circumstances, as an additional capital buffer.

Diagram 13 shows the major banks' average capital requirements divided into minimum requirements, capital requirements under Pillar 2 and combined buffer requirements. The capital requirements are expressed as a per cent of the firms' risk-weighted assets. The risk-weighted exposure amount is determined by how high the risk of losses is from various assets (exposures). The major Swedish banks have good capital adequacy in relation to the minimum requirements, a large part of which is made up of Pillar 2 and buffers. The large buffers enhance the banks' resilience since they can be used to absorb losses under certain circumstances without the bank needing to be entered into resolution or wound down.

BENEFITS OF RISK-SENSITIVE REQUIREMENTS OUTWEIGH THE NEGATIVES

The major banks' common equity Tier 1 (CET 1) capital increased by SEK 3.7 billion to approximately SEK 521 billion. Storbankerna har mycket kapital i förhållande till deras riskvägda tillgångar jämfört med andra europeiska banker. Their CET 1 capital ratios have continued to increase over the past six months since their equity has increased more than their risk-weighted assets (Diagram 14). The major banks' non-risk-weighted assets have instead increased more than equity during the same period. The leverage ratio has thus dropped slightly to 4.3 per cent during the first quarter of 2016. The fact that Swedish banks have high CET 1 capital ratios but more regular leverage ratio levels (Diagram 15) reflects the fact that they in general have a large percentage of assets with low credit risk, such as mortgages.

DIAGRAM 15: Leverage ratio for European and Swedish banks
(Per cent Q4, 2015)



Source: The bank's quarterly reports.

Note. Refers to fully phased-in leverage ratios as of Q4 2015 according to the banks' interim reports. Crédit Agricole, Belfius, Intesa and ING Bank have not reported fully phased-in leverage ratios and figures because 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.

The increase in the major banks' CET 1 capital ratio in recent years is due to both an increase in capital and a decrease in their risk-weighted exposure amount as a result of lower risk weights. The fact that risk weights have decreased so noticeably in recent years is mainly because a larger share of the loans are going to borrowers with better creditworthiness and that risks in the Swedish credit market are relatively low. Another factor is also that the major banks have been given the opportunity to use internal models (IRB approaches) to calculate their capital requirements, and these models are based on historical loss data.

The banks' risk weights and capital requirements should cover the future risks of the banks. FI therefore believes that the low historical credit losses in Sweden lead to risk weights that are much too low for the banks that are using IRB approaches to calculate their capital requirements. FI plans to tighten the rules for how the IRB approaches are used, and the change in methodology will result in noticeably higher risk weights and capital requirements for Swedish banks. The risk weights will also subsequently become more stable over time, which will improve financial stability. The risks weights for Swedish banks' exposures to corporates are expected to increase by at least a few percentage points for all banks and as a minimum be around 30 per cent.⁶

Even if there a number of problems associated with risk-based capital adequacy requirements, for example weaknesses in IRB approaches, FI believes that capital requirements should be risk-sensitive. Higher-risk lending as a rule is compensated by a higher yield, but this also means that there is a greater risk of credit losses. A non-risk-based approach would mean that the capital requirement would be the same regardless of the risk level in the banks' exposures. The banks' incentives for sound risk-taking therefore decrease under such a capital requirement.

New rules for crisis management

Large banks that are experiencing financial problems often receive state support since a disorderly bankruptcy could have significant negative consequences for the financial system and the economy. One reason for this is that the functions that the banks provide need to be maintained to avoid exacerbating any problems and spreading them to other areas of the financial system. The operations of the major banks are also often complex and international, which makes them difficult to wind down in an orderly and efficient fashion.

On 1 February 2016, the European Bank Recovery and Resolution Directive entered into Swedish legislation. The Directive is based on the observation that a normal bankruptcy proceeding is not appropriate for banks and aims to decrease the risks for and scope of new bank crises. The Directive's point of departure is that losses in the banking system should be carried by the bank's owners and lenders rather than the taxpayers. If owners and lenders are more likely to carry the losses, banks will face smaller incentives and opportunities to take large risks.

For FI, this new regulation introduces new and expanded powers and areas of responsibility. For example, it falls under FI's purview to ensure that banks are able to handle financial stress on their own through good contingency preparation. The banks must therefore prepare recovery plans, which

⁶ FI's supervision of banks' calculations of risk weights for exposures to corporates, May 2016, Decision Memorandum (Ref. 15–13020).

contain measures to take when in an exposed situation. They must also enter into agreements for intra-group financial assistance, if necessary, in order to facilitate equity transfers when parts of the banking group are experiencing problems. If banks make the necessary preparations during strong economic periods, they will be better equipped to handle crisis situations, even if the actual course of events may deviate from the plan.

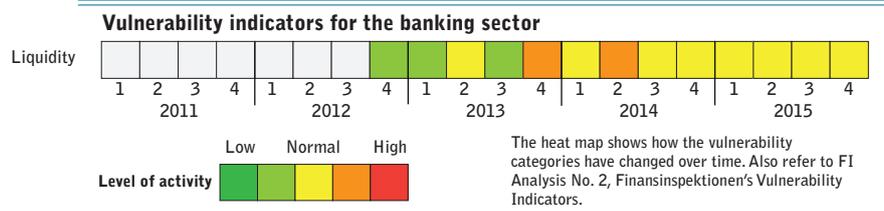
During 2016, FI reviewed and assessed the recovery plans for the four largest Swedish banks. The objective of the assessment was to ensure that the plans clearly stated how and when the bank intends to handle various financial stresses. Since the focus is on banks with cross-border operations, this assessment was carried out in close collaboration with the supervisory authorities in other countries. By reviewing the banks' recovery plans, FI also gains a better understanding of how a general crisis may develop when several banks take one or more of their measures at the same time.

FI is also responsible for determining whether a firm is failing or likely to fail. If such a decision is made, the resolution authority, the Swedish National Debt Office, must decide to put the bank in resolution, if there are no alternative measures to save the bank and it is in the public interest to use the resolution tools.

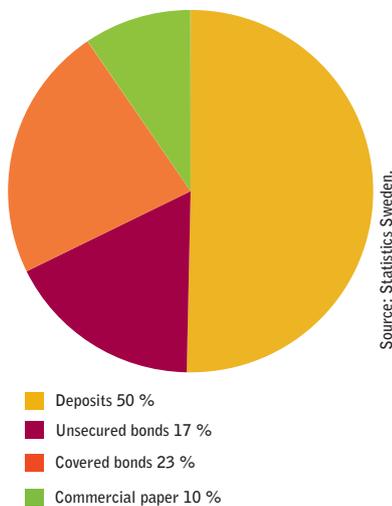
One of the Swedish National Debt Office's tools for handling failing firms is to write down relevant capital instruments or convert them to shares ("bail-in"). In order to ensure that the banks have sufficient buffers, the Swedish National Debt Office requires banks to issue a certain amount of securities that can be written down in the event of a resolution. These requirements interact with the capital requirements FI establishes in its capacity as a supervisory authority. These two authority requirements need to be calibrated using a holistic approach to ensure that the banks have debt structure that is suitable from the viewpoint of both stability and efficiency.

Banks' funding and liquidity risks

The major Swedish banks obtain a relatively large share of their funding from professional actors who are not covered by the deposit insurance scheme. Covered bonds are an important instrument for this funding. Confidence in the Swedish banking system – and indirectly the mortgage market – therefore plays a key role in the ability of the banks to obtain market funding. Swedish banks hold relatively large liquidity buffers, which means that they would be able to withstand a transition period if investors' confidence were to wane. In the event of a crisis, the Riksbank could also provide liquidity assistance.



16. DEPOSITS REPRESENT FIFTY PER CENT OF THE BANKS' FUNDING (Per cent, Q4 2015)



Note. Refers to Swedish monetary financial institutions.

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 a prerequisite for banks having good access to funding and thus being able to offer key social services, such as lending, to its customers. If this confidence were to wane, one or more banks could find it difficult to find funding and experience difficulty in helping customers with loans and other financial services. By extension, a drop in confidence could also lead to problems for the stability of the Swedish financial system.

SWEDISH BANKS' FUNDING STRUCTURE

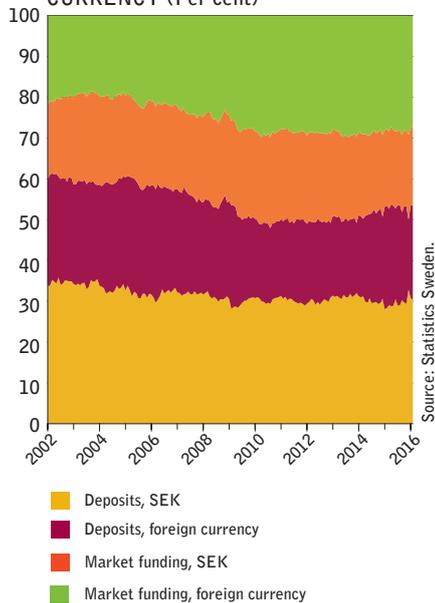
Swedish banks fund themselves through deposits from households and firms and by borrowing on financial markets through bonds and commercial paper (Diagram 16). Swedish banks' deposits as a share of total funding are low from a European perspective. This is because Swedish households to a larger extent than other European households save in shares, funds and endowment insurances.

The distribution of currency indicates to some extent whether the financiers are Swedish or foreign. Approximately half of the Swedish banks' funding is in SEK while the rest is split between other currencies (Diagram 17). Deposits in SEK come primarily from households and are covered by the deposit insurance scheme.⁷ Deposits in foreign currency come from both households and professional actors. The parties that fund the banks by purchasing their securities are almost exclusively professional actors.

When breaking down funding by type of securities and currencies,

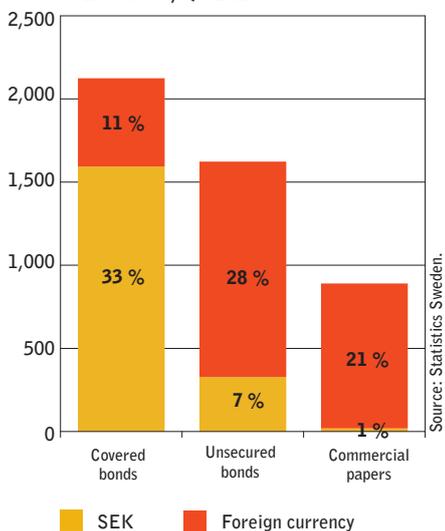
⁷ In Sweden, as in most countries in the western world, the state has set up a deposit insurance scheme to reduce the risk of bank runs. Deposit insurance means that the state guarantees the customers' deposits with institutions registered with the scheme. The insurance enters into force if an institution goes bankrupt or when FI decides that it shall enter into bankruptcy. The state then reimburses capital and accrued interest up to a maximum amount corresponding to EUR 100,000 per person and institution.

17. FIFTY PER CENT OF FUNDING FOR SWEDISH BANKS IN FOREIGN CURRENCY (Per cent)



Note. Refers to Swedish monetary financial

18. DIFFERENT SECURITIES HAVE DIFFERENT CURRENCY BREAK-DOWNS AND TARGET DIFFERENT INVESTMENT CATEGORIES (SEK billion, Q4 2015)



Note. Refers to Swedish monetary financial institutions.

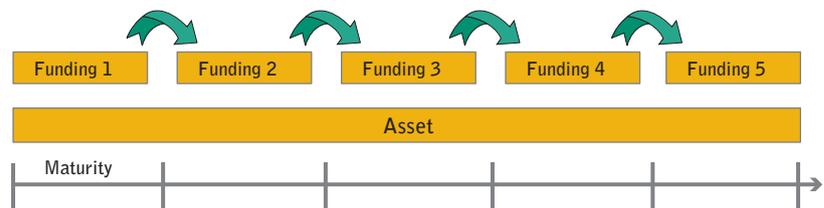
Swedish investors dominate covered bonds and foreign investors fund Swedish banks through unsecured bonds (Diagram 18). Funding through short-term commercial paper occurs almost exclusively through foreign currency.

MATURITY TRANSFORMATION CREATES VULNERABILITY

The maturity of the banks' liabilities is shorter than the maturity of their assets. Savers may withdraw their money with little advance notice while borrowers may keep their loans over a longer time horizon. Maturity transformation plays a central role in the banks' business it also introduces a vulnerability into the banking system since this means that the banks are exposed to refinancing risks (Figure 1).

Notwithstanding the refinancing risks, a banking system without maturity transformation is not desirable. Maturity transformation benefits both savers and borrowers. Without maturity transformation, borrowers would need to renew their loans on a regular basis. Savers would not be able to take out their money as easily to meet unforeseen expenses.

FIGURE 1. Maturity transformation



Swedish banks are exposed to refinancing risks

In order to assess the bank's liquidity risks, it is necessary to understand the banks' maturity profiles for both liabilities and assets. The size of the banks' refinancing risks largely is dependent on how well the maturities of the liabilities and the capital tie-up of the assets match one another. A high degree of maturity matching means lower risks.

Another important dimension is who is funding the banks. Swedish banks have a very high share of foreign investors. By having a diversified geographic investor base, the major banks create more alternative funding channels, which reduces the refinancing risk since they are not dependent on a few lenders. At the same time, however, 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.

Banks' maturity matching

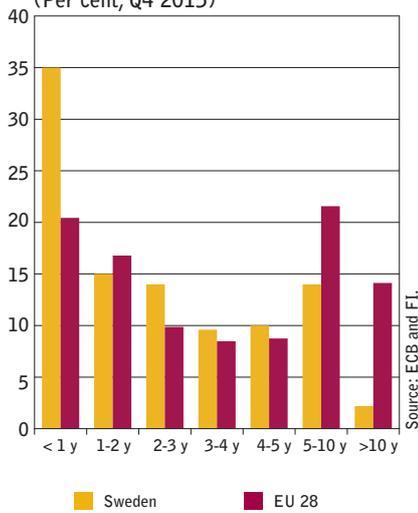
The average maturity for the market funding of the major Swedish banks is around three years, which is relatively short in a European comparison (Diagram 19). At the same time, the actual maturity for many of the Swedish banks' assets is long, which poses a structural liquidity risk (Diagram 20).

The maturities for assets and liabilities match one another relatively well in the short and long term, but there may be imbalances in the different maturity segments (Diagram 20). A relatively large share of primarily liabilities do not have a contractual maturity, for example deposits from the general public.

Stable funding limits funding risks in the long run

Taking into consideration all of the available information, FI makes the assessment that the Swedish banks' exposures to refinancing risks are

19. BANKS' SECURITIES HAVE SHORT MATURITIES
(Per cent, Q4 2015)



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

Source: ECB and FI.

currently relatively small. Confidence in the Swedish banks is high and their access to funding continues to be strong. However, Swedish banks are still exposed to a structural refinancing risk. FI therefore believes that the banks should have stable funding with a well-balanced maturity transformation.

To limit the structural liquidity risks associated with the bank's maturity transformation, i.e. to 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 (NSFR).⁸ In short, the NSFR requirement means that banks must finance assets with a maturity that exceeds one year using liabilities with a maturity that also exceeds one year.

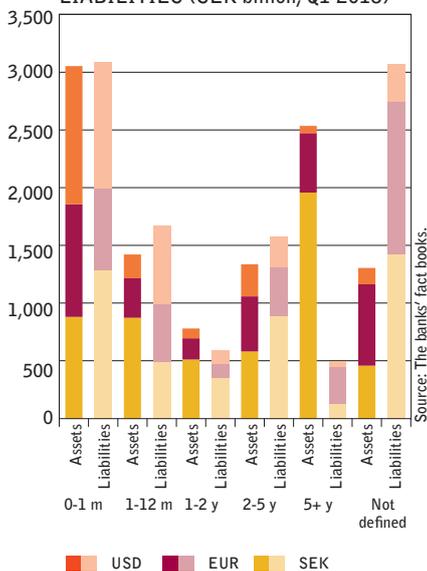
The formulation of this requirement is largely complete and it is planned to enter into force in 2018. The major Swedish banks are already relatively close to the planned requirement of 1.0 (Diagram 21). Because the major banks are currently under the pending requirement, the vulnerability indicators in the introduction to this section are signalling yellow. FI recommends that Swedish banks continue to work on extending the funding used for assets with long maturities in order to reduce the structural liquidity risk.

Liquidity buffers reduce short-term financing risks

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

An important step in the work on reinforcing the banks' resilience to shocks in their financing is the introduction of a Liquidity Coverage Ratio (LCR) requirement. The LCR is a risk measure in the form of a stress test that reflects short-term liquidity risk. According to this requirement, banks must hold a liquidity reserve which as a minimum equates to 30 days' net outflows in stressed conditions. The requirement applies to EUR and USD as well as to all currencies combined. As presented in Diagram 22, the major Swedish banks fulfil the LCR requirements.

20. MATURITIES OF ASSETS LONGER THAN THOSE OF LIABILITIES (SEK billion, Q1 2016)



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 duration are included under the item Not defined.

Source: The banks' fact books.

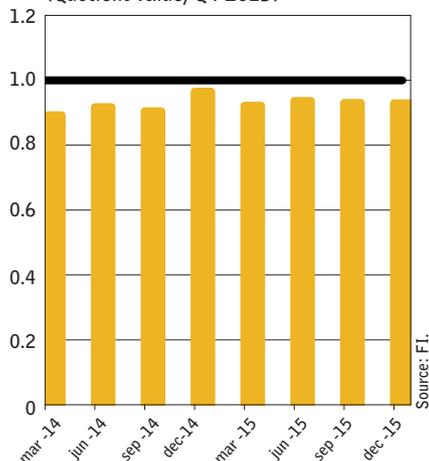
THE RIKSBANK'S LIQUIDITY ASSISTANCE AS A COMPLEMENT

The banks' liquidity reserves mean that they could withstand exclusion from the market for a period of time. Requirements on liquidity buffers in individual institutions reduce the probability that the state will need to intervene. However, in a more serious scenario the authorities will probably need to get involved.

For a long time now, the objective of liquidity assistance from the central bank in a crisis has been to support solvent banks, in exchange for good collateral, on terms that mean this support is not used by banks under normal market conditions. Requirements of acceptable collateral for loans and liquidity buffers reduce the probability of banks taking too much liquidity risk.

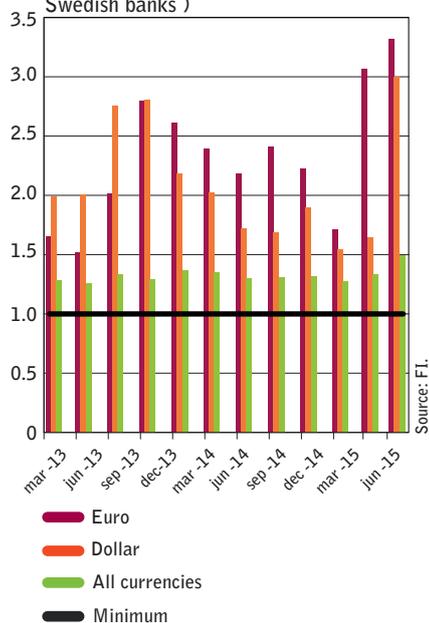
⁸ Basel III: the net stable funding ratio, October 2014, Bank for International Settlements. <http://www.bis.org/bcbs/publ/d295.htm>.

21. THE BANKS ARE CLOSE TO THE UPCOMING REQUIREMENT ON NET STABLE FUNDING RATIO (Quotient value, Q4 2015)



Note. Refers to the Swedish major banks' liquid borrowing as a percentage of their illiquid assets. The benchmark is 1.

22. BANKS FULFIL THE REQUIREMENT ON LIQUIDITY COVERAGE RATIO (Quotient value, average major Swedish banks)



Anm. Refers to liquid assets of major Swedish banks as a per cent of net cash outflows.

The challenges linked to the central bank's liquidity assistance involve finding a solution that complies with both the law and how banks and markets function in distress and at the same time creates good incentives for banks to manage their own risks.

In the event of an extensive systemic shock, it is doubtful whether banks would be able to make use of their liquidity buffers in the same way as when an individual bank suffers problems. There is a high probability that there will not be enough buyers on the market for the securities the crisis-stricken banks need to sell from their liquidity reserves. In such a situation, liquidity assistance from the Riksbank is necessary to maintain financial stability.

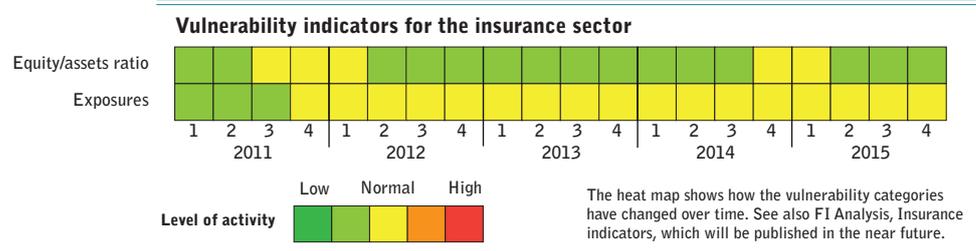
The Riksbank can take measures that generally improve liquidity, such as offering loans at longer maturities than normal and accepting more collateral types when lending than otherwise. The Riksbank showed through its actions during the financial crisis in 2008 that liquidity assistance measures can efficiently alleviate prevailing problems.

However, the Riksbank's ability to provide general liquidity assistance is not regulated in the Riksbank Act. During the financial crisis, the Riksbank was therefore directed to provisions that primarily relate to monetary policy. It worked, but this approach is questionable in terms of its principle grounds. FI takes the position that this justifies a clarification of the Riksbank's responsibility and authorisation. It should be expressly stated that the Riksbank shall counteract shocks to the supply of liquidity and that it may issue loans, buy securities, etc., in order to achieve this purpose. FI therefore believes that the Riksbank's responsibility for the supply of liquidity, particularly during crises, should be clarified in the Riksbank Act.⁹

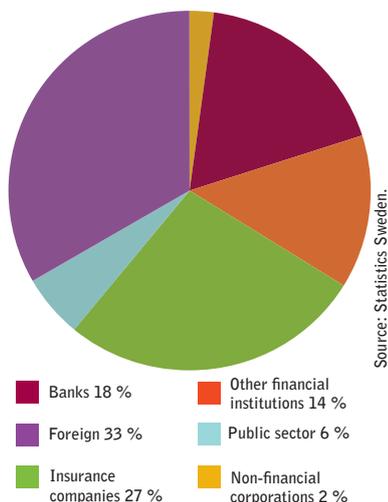
⁹ See the Review of the Riksbank's Monetary Policy 2010–2015 (2015/16:RFR6) commissioned by the Committee on Finance, FI Consultation Response (Ref. 16-1142).

Markets and insurance companies

Well-functioning securities markets are important for firms' possibilities to finance investments, make payments and manage market risks. Market liquidity affects the funding of banks and the market risk management of life insurance companies. Market liquidity in the systemically important markets has remained at the same level in recent years, but FI makes the assessment that resilience to shocks may have decreased. During previous periods of financial stress, the actions taken by life insurance companies, combined with limited market liquidity, aggravated a fall in equity prices and interest rates. After making changes to the regulations, the pressure on life insurance companies to change their portfolios in the short term has decreased.



23. BANKS' COVERED BONDS ARE TO A LARGE EXTENT OWNED BY OTHER BANKS AND INSURANCE COMPANIES (Share, per cent, Q4 2015)



Note. All foreign entities, whether non-financial corporations, the public sector, insurance undertakings or other financial institutions, are included in the foreign category.

Along with the major banks, systemically important securities markets are important for financial stability. Securities markets provide the channel through which the financial system sets prices and allocates risk and capital. Well functioning markets act as shock absorbers if needed. Poorly functioning markets aggravate and spread problems.

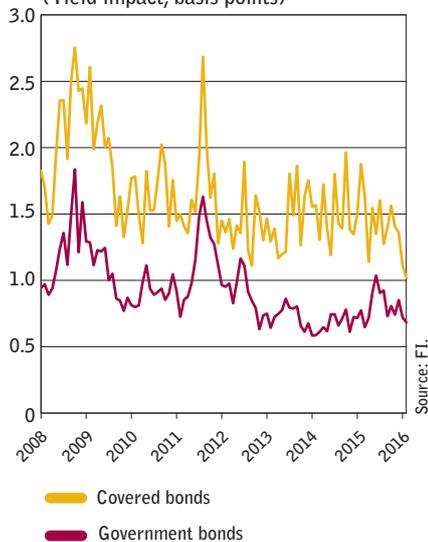
FI makes the assessment that the fixed-income and foreign exchange markets are the most systemically important, as it is these markets the financial firms use for their day-to-day financing and risk management. From a stability perspective, it is important for these markets to have strong market liquidity, particularly during times of stress.

Market liquidity means the possibility to conduct transactions without excessively high costs and excessively high price sensitivity. Strong market liquidity makes it easier for firms to adapt their portfolios and reduce risks that they no longer want to carry. If firms cannot reduce the risks they no longer want to carry, they may instead be forced to take other measures. For example, a life insurance company may want to reduce its exposure to falling interest rates but is instead forced to sell shares at a point in time when they are undervalued.

SYSTEMICALLY IMPORTANT FIXED-INCOME MARKETS ARE FUNCTIONING WELL

In terms of financial stability, the market for covered bonds plays a special role. Covered bonds are the largest category in the banks' securities-based funding (see Banks' funding and liquidity risks). Covered bonds create interlinkage within the financial system since their holders to a large extent are other banks, insurance companies and funds (Diagram 23). Since the security pool consists of mortgages, there is also a link to household indebtedness.

24. UNCHANGED MARKET LIQUIDITY IN RECENT YEARS
(Yield impact, basis points)



Note. The diagram shows the average transaction cost per month for the Swedish market for covered bonds and Government bonds. The transaction cost is measured as yield impact, which, simplified, is the impact a transaction has on the market interest rate. The yield impact in this chart is a derivation of the measure used in FI Analysis No. 3 in 2015.

Market liquidity in the trade of covered bonds plays an important role under both normal conditions and stressed conditions. Impaired market liquidity under normal conditions leads to higher funding costs for banks and, by extension, even their borrowers. Impaired market liquidity under stressed conditions decreases the banks' trading capacity and investors' possibilities to manage market risks. For example, banks may find it difficult to transform securities in their liquidity buffer into cash and cash equivalents.

FI is closely following developments in market liquidity. Diagram 24 shows the yield impact, which is high when market liquidity is low. The results imply that the market liquidity for covered bonds has more or less been the same in recent years. However, the results should be interpreted with some caution. Market liquidity can be good under normal conditions, but becomes impaired during periods of financial stress, for example during the financial crisis or the sovereign debt crisis.

Why has the measured market liquidity not become impaired?

Since the financial crisis, changes have been made to both the banks' operations and financial regulations, which has influenced the conditions and incentives for market makers. Banks need to hold more capital for their trading books than before and fund them with longer maturities. As a whole, the regulations and the banks' changed business models should have had a negative impact on market liquidity.

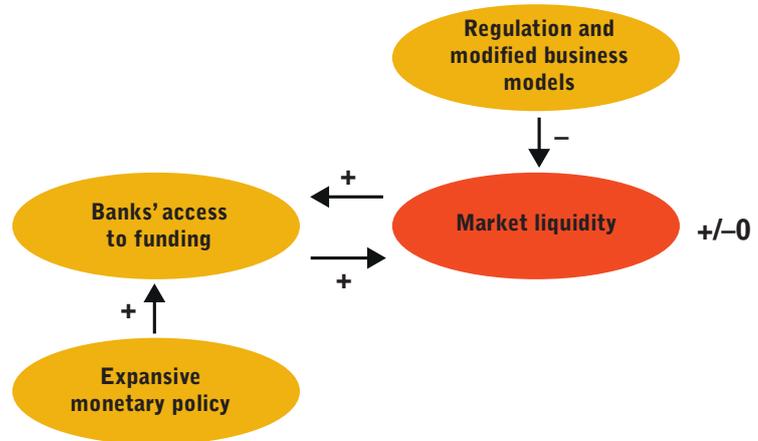
A sign that market liquidity has become impaired is when market prices for some of the world's most liquid assets spike for a short period of time without any reasonable explanation. This happened on 15 October 2014 on the market for US treasury bonds and 7 May 2015 on the market for Germany treasury bonds. However, empirical studies are showing unchanged or improved market liquidity, which stands in contrast to the sign that market liquidity has become impaired.¹⁰

Good market liquidity under normal conditions does not need to be the opposite of high vulnerability to shocks. Changes to the regulations and the banks' business models may very well have impaired market liquidity, but other, more temporary, factors may have acted in the opposite direction.

One such factor is the expansive monetary policy that has made it easier for the banks to fund themselves. With strong access to funding, the banks' market makers also face improved conditions for funding trading books, which benefits market liquidity. Strong market liquidity in the securities issued by the bank make it easier for the bank to secure funding. There is a self-perpetuating dynamic in the relationship between market liquidity and the banks' access to funding.

10 Occasional Paper No. 14: Liquidity in the UK corporate bond market: evidence from trade data, March 2013, Bank of England.

Figure 2: Market liquidity may have remained unchanged despite an increase in regulation and modified business models because banks have easy access to funding due to an expansive monetary policy



Even if the measured market liquidity is currently considered to be strong under normal conditions, there is still cause to be wary. Market liquidity may become impaired during financial stress or after monetary policy is normalised. For these reasons, there is also cause to continue to monitor how the systemically important markets function.

LIFE INSURANCE COMPANIES HAVE NOT BEEN PROCYCLICAL

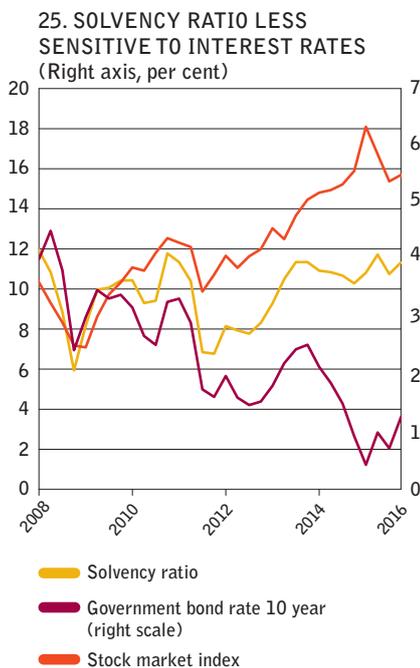
Insurance undertakings in Sweden manage assets totalling SEK 4,000 billion. Two-thirds of these assets belong to traditional life insurance management.

Life insurance companies have commitments in the form of future pensions. Assets consist primarily of shares and interest-bearing investments. The challenge for these firms is to manage assets and liabilities and to manage risks such that they are able to meet their guaranteed commitments. This management shall preferably also create a surplus that can be distributed as a bonus.

When a life insurance company's financial strength declines, for example due to falling equity prices, it may need to better match the risk profile of its assets to its liabilities. This means in practice selling higher-risk assets like shares or purchasing bonds with a long maturity. When several life insurance companies behave in a similar manner, the movements on the markets are amplified and thus can deepen financial crises. This is called procyclicality.

The regulations for valuing the commitments of life insurance companies have changed several times over the past decade. The design of the regulation affects the phase in which the firms need to take measures and the measures they take. Several years ago, life insurance companies faced strong incentives to match assets to the risk profile of their liabilities, which enhanced the market fluctuations.

Under the current regulations, the firms face weaker incentives than before to manage interest rate risk and will therefore not need to react as quickly. Given that the firms do not appear to have enhanced the tur-



Note. Life insurance companies' solvency in relation to growth of a yield index for shares and the interest rate on a 10-year government bond.

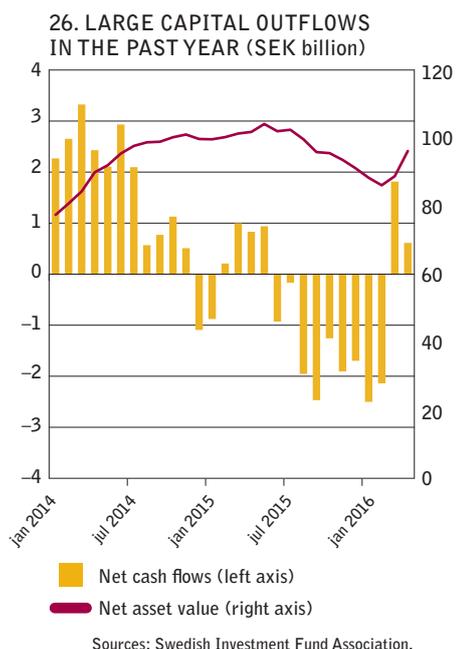
Source: FI and Thomson Reuters Eikon.

bulence at the beginning of the year, it is FI's assessment that they have sufficient financial strength not to take procyclical action in the short term (Diagram 25).

RISKS FOR PENSION SAVERS IN THE LONG RUN

In the long run, the worst-case scenario is that one or several life insurance companies will not be able to meet their commitments. The low interest rates are particularly challenging. As mentioned above, the regulations have been changed to counteract procyclicality. However, one disadvantage of the regulatory changes is that a risk emerges that pension liabilities may be undervalued due to the low interest rates. The changes have also decreased the transparency of the life insurance companies' financial strength, which means that FI may intervene first at a stage when it is already too late to transfer assets and liabilities to another insurance company. There is a risk that the assets will not be sufficient for meeting the commitments.

In 2015 FI conducted a review of the ability of the six largest life insurance companies to meet their commitments to future pensioners. FI concluded then and continues to make the assessment that these six firms have the capacity to handle continued low interest rates. Commitments can be met on the conditions that the assets maintain their value and there is no assumption of future return.



Flows out of corporate bond funds

In a classic bank run scenario, many savers want to withdraw their money at the same time. The bank does not have enough cash to meet everyone's request and is forced to sell its assets at whatever price it can get. This presses down the market price on similar assets owned by other banks. Problems spread from one bank to other banks and then the rest of the economy.

By requiring banks to hold capital and liquidity buffers and establishing a deposit insurance scheme, banks become more resilient. There is no equivalent type of regulation and safety net in the securities market. Sometimes conditions arise that appear similar to the start of the classic "run". Funds where investors in the fund are entitled to redeem their units on a daily basis are similar to a classic bank but without deposit insurance. Professional actors are normally aware of the risk, but households may not be.

The market for corporate bond funds has grown in recent years. Over the past ten years, the number of issuers of corporate bonds on the Swedish market has increased from just over 10 to almost 60, and the issue volumes have also increased sharply. The low interest rates on the banks' deposit accounts have encouraged households to turn to corporate bonds to a greater extent than they did before as a form of savings.

Trade in corporate bonds is subject to limited liquidity, low turnover and a lack of transparency. Market liquidity is lower than for bonds issued by the state and banks. This limited liquidity combined with the transparency of the second-hand market makes corporate bond funds vulnerable to rushes.

In December 2015, the US fund, Third Avenue Focused Credit Fund, suffered such a strong run from its investors that it was not able to meet their requests. The fund had extensive investments in corporate bonds with very high risk and low liquidity. The decision was made to freeze the fund's redemptions and to liquidate the holdings of the fund.

No similar runs have been observed among savers in Swedish corporate bond



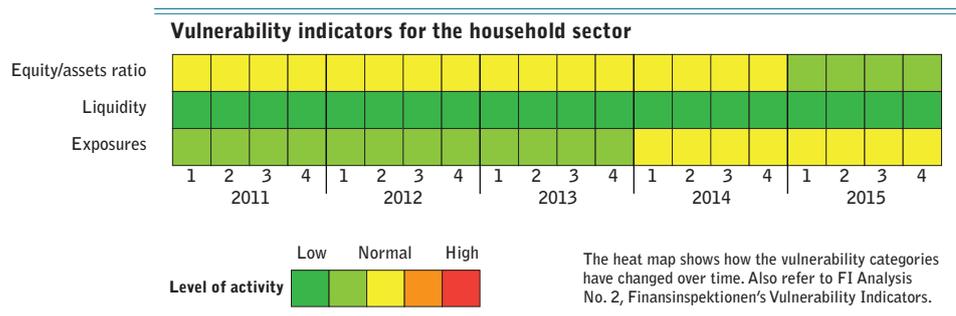
funds, even if outflows in the past year have risen (Diagram 26). However, in contrast to the case in the USA, Swedish corporate bond funds do not invest to any large extent in high risk bonds.

FI's supervision of funds often focuses on consumer protection. FI is currently conducting an investigation into how liquidity risks are managed in corporate bond funds, which benefits both the protection of consumers and financial stability. A fund that efficiently manages its liquidity risks is more resilient, and there is a lower probability that problems in one fund will spread to other, similar funds. The amounts currently managed in Swedish corporate bond funds are not so large that they can be considered to pose a threat to financial stability.



Indebtedness and the Swedish economy

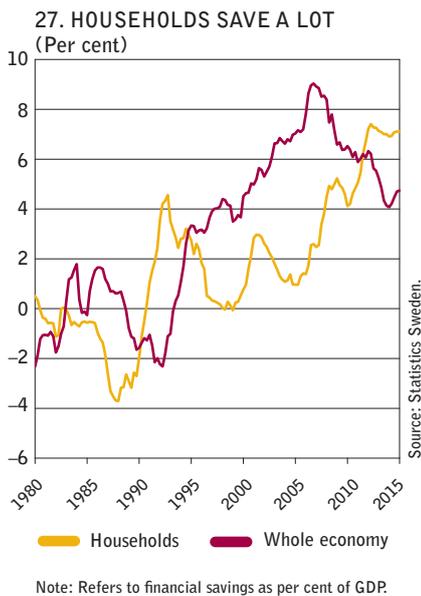
High indebtedness of households can lead to higher economic instability and in the long run pose a risk to financial stability. Debts are rising rapidly and house prices are high. In a future economic downturn, house prices could fall sharply and highly indebted households may greatly reduce their consumption, thus aggravating the downturn. On 1 June, FI's amortisation requirement will enter into force. If the risks associated with indebtedness are not subdued, additional measures against indebtedness may be necessary.



Loans provide firms and households with the opportunity to invest and consume without requiring them to save the needed funds in advance. The ability to borrow contributes to a more efficient use of savings 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 risks for both lenders and borrowers and the economy at large. If imbalances accrue, the economy becomes more sensitive to shocks.

Expectations about their own development and that of the Swedish economy affect the decisions of households and firms to take on loans. Even lenders' credit decisions are based on an assessment of the borrower's expected repayment capacity. In good times, when expectations about the economy are strong, both demand and supply of loans typically increase. In today's environment of low interest rates, rising income and strong economic growth (see State of the economy), asset prices, consumption and debts could increase rapidly, which would further enhance the strong economy. If the upswing becomes too strong, the economy may become overheated and imbalances may arise. This could mean that households and firms are overly optimistic and take on larger debts than what they can handle in the long run, that the value of assets is excessively high and that lenders are too willing to grant loans.

If imbalances accrue, the economy becomes more sensitive to various types of shocks, regardless of whether they occur in the Swedish economy or in other national economies. These shocks could have a negative effect on the Swedish economy and thus break the upward trend. Shocks decrease confidence in the economy and the view of risk changes. As a result, economic activity declines and asset prices may fall. If households and firms have taken on too much debt during boom times, there is also a risk that they will no longer be able to pay their loans. In a worst-case scenario this could lead to losses in the financial system that are so large that the financial stability is threatened. When



the financial system is not fully functional, loans are impacted negatively. This decreases the possibilities of households and firms to consume and invest, which further aggravates a downturn in the economy.

Since the credit market plays a key role both in the upturn and downturn of the economy, it is important that FI monitor its development and take measures to counteract any imbalances that may occur.

HOUSEHOLDS APPEAR TO HAVE BUFFERS FOR DOWNTURNS

Overly excessive optimism can lead to households consuming a lot in relation to their income. If households are currently consuming their entire surplus after paying for their housing, they would need to decrease consumption in order to be able to manage higher interest rates or weaker income growth. However, compared to Danish households during the years before the downturn there, Swedish households do not have a high level of consumption. Rather, aggregate household savings are high, which means that most households have relatively strong margins in their cash flows (Diagram 27). However, high aggregate savings in the household sector is not a guarantee that parts of the household sector will not make short-term decisions. This is because the savings may be unevenly distributed across households, i.e. some households may save a lot and others little or not at all. It is therefore also a good idea to observe other indicators of household savings and consumption in order to gain a more comprehensive view of households' behaviour and expectations.

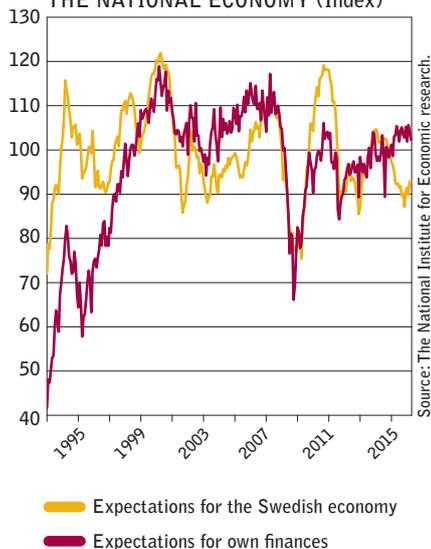


Households' consumption of durable goods can be expected to increase when households are optimistic, and it can also be assumed to be more evenly distributed across households than savings. Households currently do not appear to be spending abnormally high amounts on durable goods, although consumption has increased from a low level in recent years (Diagram 28). In other words, households appear to have become more optimistic in recent years. The picture is the same when only taking into consideration consumption of cars in relation to household income, which, other than housing, is one of a household's largest purchases and thus can be assumed to be more evenly distributed than savings.

The National Institute of Economic Research's household indicators also show that Swedish households currently have a somewhat more positive view of their own economy than normal, but their view of the Swedish economy as a whole is also more pessimistic (Diagram 29). Given these indicators, there are no clear signs that households have overly optimistic expectations.

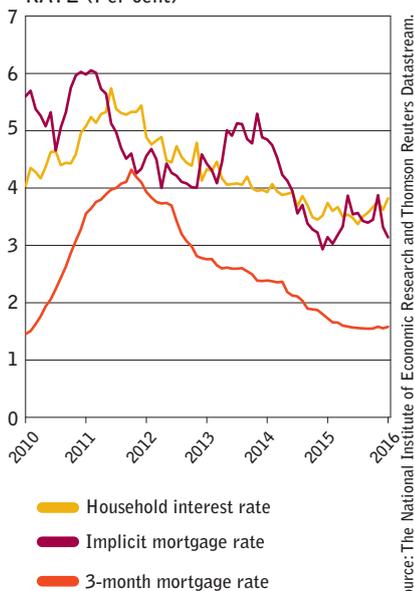
One important factor that affects households is the current low level of interest rates. Swedish households are today paying historically low interest rates on their mortgages. If many households take these interest rates for granted, they may be forced to make extensive adjustments if and when the interest rates rise. Households' expectations of the future level of interest rates has fallen as the interest rates have fallen themselves, but not as much as the variable mortgage rates have fallen (Diagram 30). In five years' time, households expect a variable mortgage rate of around 4 per cent. This is in line with the interest rate expectations of institutions on the financial markets. Most households therefore appear to be prepared for an increase in the interest rates in the future and their expectations do not appear to be unrealistic. How-

29. HOUSEHOLDS MORE OPTIMISTIC ABOUT THEIR OWN FINANCES THAN THE NATIONAL ECONOMY (Index)



Note. Household expectations for their own finances and the Swedish economy.

30. HOUSEHOLDS HAVE REALISTIC EXPECTATIONS FOR THE INTEREST RATE (Per cent)



Note. The diagram shows household expectation of the variable mortgage interest rate in 5 years, implicit variable interest rate in five years according to the prices on the financial markets and the current variable mortgage rate. The implicit rate is calculated as 1 yr STIBOR between years 4 and 5 + a spread of 2 per cent.

ever, it is not possible to rule out that interest rates may rise faster and in greater increments than what both households and institutions on the financial markets are expecting. Since many households have variable interest rates on their loans, changes to the interest rate level can quickly affect households' economies (see Does the increase in lending at variable rates represent a stability risk?).

Does the increase in lending at variable rates represent a stability risk?

It has become more common for Swedish households to borrow at variable rates. Around 70 per cent of households' loans are at variable rates and only around 2 per cent of loans are fixed for more than five years. A high percentage of loans at variable rates means that the finances of households are quickly affected by changes in interest rates. If interest rates rise unexpectedly, this would affect households' interest rate expenses rather quickly, which means that they would need to reduce their savings or consumption in order to be able to make their loan payments. Even if FI's stress test indicates that households have buffers that will allow them to manage significant increases in interest rates, the high percentage of households with variable rates means that household consumption becomes more sensitive to interest rates and households are more exposed to interest rate risk.

The high interest rate sensitivity of households also means that they are less sensitive to fluctuations in the economy. Since interest rates tend to be low during economic downturns and high during upturns, household consumption could be more efficiently aligned to the state of the economy. A high share of variable rates could thus also make the households' finances less sensitive to economic fluctuations. However, today's interest rates are exceptionally low. This means that there are limited possibilities for stimulating household consumption by further lowering interest rates if the economy were to dip.

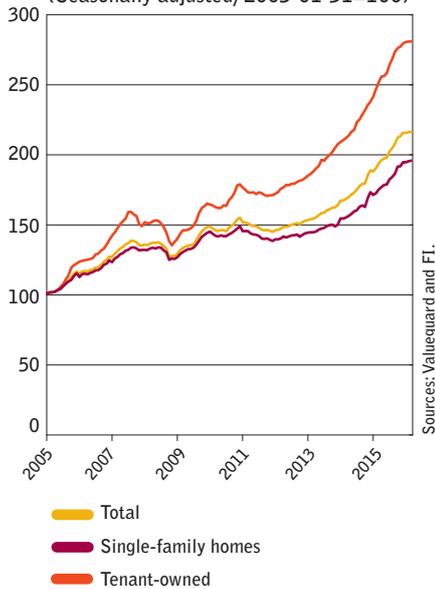
As a whole, there are both advantages and disadvantages for households with a high percentage of loans at a variable rate. For society at large, the consequences are even more complex. For example, the monetary policy decisions made by the Riksbank are potentially affected by how sensitive households are to interest rates. It is therefore currently difficult to give a clear answer to whether or not the increasing percentage of variable rate loans pose a larger risk for the Swedish economy.

GROWTH RATE OF HOUSE PRICES SLOWS DOWN

Household debts consist primarily of mortgages. How quickly house prices increase therefore greatly affects the rate at which household debts increase. In recent years, Swedish house prices have increased sharply (Diagram 31). Since the end of 2015, the rate of increase has slowed slightly, but this positive trend has continued over a number of years. Developments reflect the high demand for housing, primarily in metropolitan areas where there is high population growth and a large shortage of housing. The supply of rental housing is also limited. Low interest rates and the design of the tax system are also reducing costs for loan-financed housing purchases, which increases households' willingness to pay.

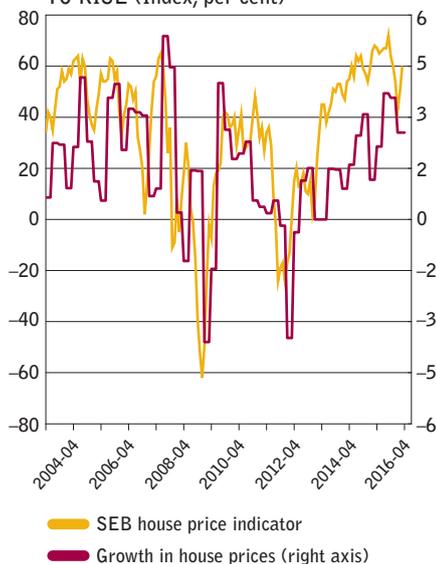
In the long run, it is not sustainable for housing prices to increase much faster than household incomes. It is therefore reasonable to expect house prices to continue to rise at a slower rate in the future. This

**31. GROWTH IN HOUSE PRICES
LEVELED OFF**
(Seasonally adjusted, 2005-01-31=100)



Note. House prices, seasonally adjusted index.

**32. MANY HOUSEHOLDS EXPECT
HOUSE PRICES WILL CONTINUE
TO RISE (Index, per cent)**



Source: Thomson Reuters Datastream.

Anm. The house price indicator shows the net number of households that believe house prices will rise or fall. A change in the house price refers to a quarterly change in the real estate price index.

should also result in more subdued growth of household debt. However, even if house prices stabilise, it may take a while before the rate at which debt is growing slows as well. This is because house prices are at a significantly higher level than they were a few years ago, which means that people moving in the future may have a large need for a mortgage. It can take time before a slow-down in house prices affects the rate at which debts increase. It is also not guaranteed that the slow-down in house prices will continue. If house prices once again begin to rise rapidly, it is probable that debts will also continue to rise at a high rate.

Elevated risk of a fall in house prices

The rapid increase in house prices in recent years combined with the exceptionally low interest rates means that there is currently a considerable amount of uncertainty about what constitutes a sustainable price level. FI therefore makes the assessment that the risk of a fall in prices on the housing market has risen compared to a normal situation. If shocks were to affect the Swedish economy, house prices may fall sharply. Examples of shocks that could lead to a downturn could be an unexpected increase in interest rates, a sharp decline in the economy or a change in the conditions related to purchasing a residential property such that the willingness to pay off the mortgage decreases. On such change in conditions could be the implementation of measures for managing indebtedness. If the measures that are taken are too strong, there is a risk that the correction in house prices will be sharp. It is therefore important to make sure that any measures that are taken are well-balanced.

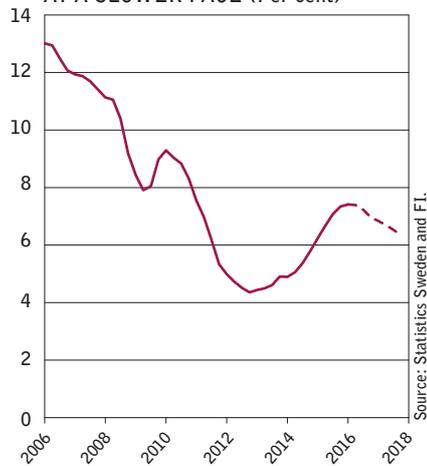
It is difficult to estimate how large a potential downturn in house prices could be. Given that it is not common in Sweden to make speculative purchases of residential properties and there is a shortage of housing propping up demand for housing, if house prices were to decline, the fall is not expected to be too dramatic.¹¹ At the same time, most households are expecting house prices to continue to rise and it is difficult to determine how they will react if these expectations are not fulfilled (Diagram 32). If house prices begin to go down, it is not possible to rule out a negative spiral and a significant drop in prices. An isolated case of a fall in house prices will not necessarily have a major impact on the economy as long as the state of the economy is otherwise favourable. However, a sharp fall in house prices in conjunction with other shocks to the economy could lead to a deep recession.

Debts are rising sharply but may slow in the future

High growth, low interest rates and rising house prices mean that there is both more of a desire and a need among households to borrow. At present, lending to households is increasing by around 7.5 per cent a year (Diagram 33). Since mid-2012, households' loans have increased faster than their income. According to FI's forecasts, household debt is expected to increase at a slower rate over the next three years. This is primarily because the current rate at which debt is growing is faster than what could be assumed to be justified based on the economic development in general. However, the slow-down in lending to house-

¹¹ Compared with some other countries, it is difficult for households to make speculative purchases of residential property in Sweden by purchasing several properties that are then rented out. The Swedish system of tenant-owner associations limits the possibilities for leasing a tenant-owned property. It is therefore typical for a household to only own one residential property, and maybe a vacation home.

33. HOUSEHOLD DEBTS ARE EXPECTED TO GROW AT A SLOWER PACE (Per cent)



Note. Lending growth to households, yearly change in per cent.

Source: Statistics Sweden and FI.

holds is expected to occur gradually, in part because interest rates are expected to continue to be very low during the forecast period. The high growth in debts implies continued elevated risks in the future. This forecast is uncertain, however, and if house prices continue to rise rapidly debts will probably also rise rapidly.

MORE HOUSEHOLDS ARE HIGHLY INDEBTED

Household indebtedness can be viewed from both the households' balance sheets and their cash flows. The balance sheet is the overall view of the value of the households' assets and debts and the difference between them constitutes the household's net wealth. If assets fall in value, net wealth decreases since the size of debts is not affected by the price of the assets. Households may then want to restore their balance sheets by increasing their saving. For highly indebted households, a fall in the price of their assets means that their net wealth becomes negative. This means that debts exceed the value of the assets, and the household would have a residual debt even after selling all of its assets to pay off its loan.

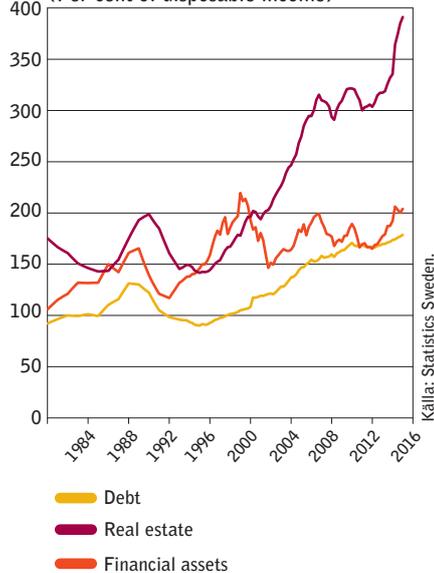
The cash flows of a household provide an overall picture of its income and expenses. The higher a household's debts in relation to its income, the larger the share of the income that is used to pay interest rates and amortisation. If the interest rates rise or if a household suffers a loss in income, its cash flows are impaired and the household may be forced to lower its consumption or savings. Variations in asset prices primarily affect the households' balance sheet, while interest rate increases or the loss of income primarily affect the households' cash flows.

The two most common ways to evaluate a household's indebtedness is to look at the loan-to-value ratio and the loan-to-income ratio. The loan-to-value ratio shows the relationship between the household's mortgage and the value of the residential property that is used as collateral for the loan. The loan-to-value ratio therefore primarily indicates the sensitivity of the household's balance sheet. The loan-to-income ratio instead shows a household's debts in relation to disposable income. This primarily provides an indication of how sensitive a household is to shocks to its cash flows. International experience suggests that highly indebted households tend to tighten their consumption more sharply following economic shocks. This applies to both households with high loan-to-value ratios and households with high loan-to-income ratios.¹² High indebtedness can therefore introduce a risk for the macroeconomic development, even if the risk for credit losses resulting from households not being able to pay off their loans is low. The more indebted households are, the greater the risk they pose. This is also why FI's amortisation requirements require higher amortisation payments for households with loan-to-value ratios above 70 per cent than households with a loan-to-value ratio between 50 and 70 per cent.

Households have large balance sheets

The debts of households have increased, but their assets have also increased sharply in value, both due to increases in value and a high level of savings (Diagram 34). Households are holding assets that are approximately three times as large as their debts. At an aggregate level,

34. BOTH ASSETS AND DEBTS HAVE GROWN RAPIDLY (Per cent of disposable income)

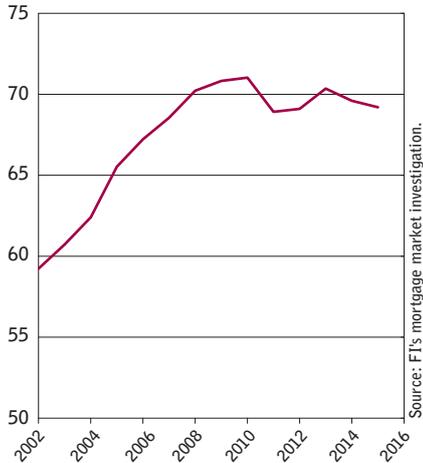


Note. Household assets and liabilities (share of disposable income).

Källa: Statistics Sweden.

¹² See e.g. Household debt and consumption during the financial crisis: Evidence from Danish micro data, Working Paper, March 2014, Andersen et al, Danmarks Nationalbank and Bunn & Rostrom (2014).

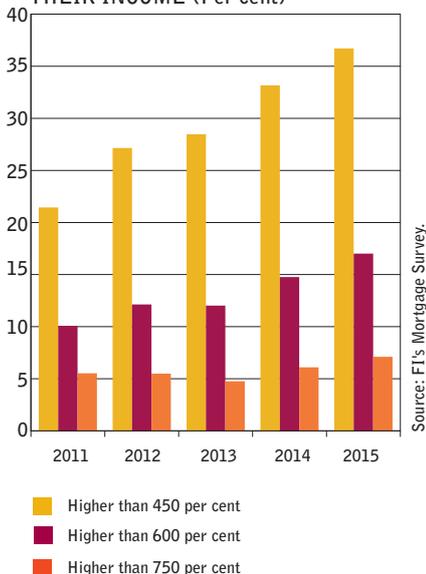
35. THE LOAN-TO-VALUE RATIOS HAVE LEVELLED OFF (Per cent)



Note. The loan-to-value ratio for new loans.

Source: FI's mortgage market investigation.

36. MORE HOUSEHOLDS WITH HIGH BORROWING IN RELATION TO THEIR INCOME (Per cent)



Note. Share of households with new loans across different loan-to-income levels.

Source: FI's Mortgage Survey.

households thus have large net wealth, but it is difficult to determine how the assets are distributed since there is no detailed data of the distribution of wealth in Sweden after 2007 when this data stopped being collected. Statistics from 2007, however, indicate that even the highest indebted households on average have assets that are clearly larger than their debts.¹³

On the whole, FI makes the assessment that Swedish households in general have a good financial position. The size of their assets means that the risk that many households will have negative net wealth if asset prices were to fall is limited. However, many studies show that highly indebted households appear to decrease their consumption regardless of the size of their net wealth.¹⁴ Since households' assets and debts have grown faster than their income, the size of their balance sheets in relation to their income has increased. This means that households may need to make considerable adjustments if they want to restore their balance sheets following a potential downturn in asset prices.

Most households need to take on loans to finance a purchase of a residential property, and households' mortgages represent the largest portion of their debts. At the same time, households' residential properties represent the largest portion of their assets. It is therefore relevant to follow how much households borrow in relation to their residential properties by following households' loan-to-value ratios. During the period 2002–2010, average loan-to-value ratios rose from 60 to 70 per cent for households that were granted new loans (Diagram 35). Since FI introduced the mortgage cap in 2010, loan-to-value ratios have stabilised and even decreased slightly. But almost eight out of ten households that are granted new loans have a loan-to-value ratio of more than 50 per cent. For the entire mortgage portfolio, i.e. all households with mortgages, the figure is seven out of ten. Many Swedish households are thereby relatively highly leveraged and could take extreme action following shocks.

Households borrow more in relation to their income

Since house prices have risen faster than household income for a long period of time, the aggregate loan-to-income ratio for households has increased. Over the past 20 years it has almost doubled and today is just under 180 per cent. The aggregate loan-to-income ratio shows the households' total debt in relation to their total disposable income. It is a blunt measure of the vulnerability of the households to shocks, since the measure is also affected by different structural factors that are not directly related to household vulnerability. For example, one factor that contributed to the increase in the aggregate loan-to-income ratio is that the share of households that own their home has increased.¹⁵ When more households own their home, there are also more households with debt. This does not need to be a stability problem in and of itself, par-

13 See e.g. Household Debt and Monetary Policy: Revealing the Cash-Flow Channel, March 2016, Flodén et al. "Highly indebted" refers to the one-third of households that have the highest debts in relation to their disposable income.

14 See e.g. Household debt and consumption during the financial crisis: Evidence from Danish micro data, Working Paper, March 2014, Andersen et al, Danmarks Nationalbank and Is a Household Debt Overhang Holding Back Consumption?, August 2012, Dynan.

15 See Explanations for the development in household debt since the mid-1990s, October 2013, Hansen, analysis materials for the Council for Cooperation, Memorandum 1, FI.

ticularly if the alternative would be highly leveraged commercial property ownership.

Looking solely at households that have been granted new mortgages, indebtedness has increased significantly there as well. The average loan-to-income ratios for households with new mortgages have increased clearly in recent years and is now more than 400 per cent. At the same time, more households have become highly indebted (Diagram 36). Despite that households on average borrow more in relation to their income and more households have high loan-to-income ratios, FI's stress tests of new borrowers show that most households have sufficient margins to handle significant increases or loss of income corresponding to unemployment.¹⁶ If the mortgage rates rose by five percentage points and house prices fell by 40 per cent, only around 2.5 per cent of households with new mortgages would have a deficit in their cash flows and at the same time have loans that are larger than the value of the home. The risk that households would not make their loan payments and that the banks would suffer losses on their lending appears to be small. FI therefore makes the assessment that the indebtedness of households does not constitute a direct risk to financial stability.

Even if households make their payments, many households may be forced to, or choose to, make major adjustments after shocks. There is a risk that there could be significant consequences for the economic cycle. Even if household indebtedness is not primarily judged to constitute a risk for financial stability it does introduce a macroeconomic risk. Given this, FI is implementing an amortisation requirement on 1 June (see below). In the long run, a sharp downturn in the economy could also mean that firms may have problems paying their debts or that there is a dip in confidence in the Swedish banks. Financial stability therefore could be affected negatively even if households manage to make their loan payments.

Measures to manage the risks of household indebtedness

In general households are considered to have good margins for managing their debts and they do not appear to be excessively optimistic, but high house prices and rapidly rising indebtedness mean that vulnerability is at an elevated level. Continued low interest rates, strong growth and house prices that continue to rise rapidly could lead to even higher risks. In the long run, this could mean that households will take larger risks with their finances, which increases their sensitivity and the height of the fall in the Swedish economy when it turns. This suggests that additional measures to counteract such a development may be needed. At the same time, such measures must be calibrated so they do not have significantly negative effects on the economy.

In order to decrease the risks associated with household indebtedness, FI has taken a number of measures. For example, FI implemented a mortgage cap in 2010 to decrease the risk that households would find themselves in situations of negative equity if house prices were to fall. FI is also introducing an amortisation requirement on 1 June of this year. The amortisation requirement means that the size of the loans of households will decrease over time, which reduces their sensitivity to shocks and thus reduces macroeconomic risks. FI's measures to manage the risks of household indebtedness are structural in nature. This means creating buffers and ensuring that households are resilient to dif-

16 See The Swedish Mortgage Market, April 2016, FI report.

ferent types of shocks. These measures should therefore be viewed as permanent regulations that are neither adjusted to short-term development nor primarily intended to have a direct impact on, for example, how quickly house prices are increasing. In order to further strengthen the resilience of the Swedish economy, more measures targeting household indebtedness may be needed. Both the mortgage cap and the amortisation requirement primarily affect the risks associated with households' balance sheets. Additional measures should therefore probably primarily target households' cash flow risks. One such example is a loan-to-income ratio, i.e. a limit on how much a household may borrow in relation to its disposable income. During the spring FI has analysed the effects of different types of loan-to-income ratios (see box).

In addition to the day-to-day work on supervision of the banks' credit assessment processes, the following measures have been implemented or announced 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 their mortgage portfolios, and since 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 banks' resilience in a crisis in accordance with new EU regulations.¹⁷
- A decision was made in September 2014 to set the countercyclical buffer rate at 1 per cent, which would be 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 as of June 2016. In March 2016 FI decided once again to raise the buffer to 2 per cent, which will apply as of 19 March 2017.
- FI, in consultation with the Swedish Bankers' Association, has also worked to promote offering customers individually tailored amortisation plans in conjunction with mortgages as of 2014.
- FI is implementing an amortisation requirement as of 1 June 2016.

FI currently does not have clear powers to take measures other than the amortisation requirement to handle macroeconomic risks associated with household indebtedness. This is unfortunate since additional measures targeting household indebtedness may be needed. FI therefore believes that its powers need to be expanded in the near future.

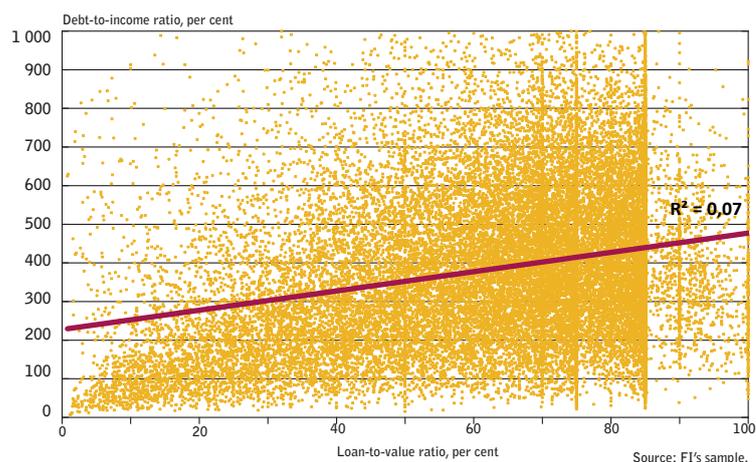
Loan-to-income cap – a potential measure

A loan-to-income cap introduces a limit on how much a lender may lend to a household in relation to the household's disposable annual income. It primarily targets the risks associated with a household's cash flows as opposed to the mortgage cap and the amortisation requirement, which are based on a household's loan-to-value ratio and primarily target balance sheet risks. FI's

¹⁷ Capital requirements for Swedish banks, May 2014, FI Memorandum (Ref. 14-6258). http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapital_ny3.pdf.

data of households that have been granted new loans shows that the relationship between a household's loan-to-value ratio and its loan-to-income ratio is weak (Diagram 37). Some households are primarily sensitive to changes to their balance sheets and others are primarily sensitive to changes to their cash flows. International experience shows that both types of sensitivity may lead households to reduce their consumption if the economy is subject to shocks. Therefore, a loan-to-income cap that prevents households from taking on large cash flow risks can serve as a good complement to FI's previous measures, which have mainly targeted households' balance sheet risks.

DIAGRAM 37. Weak correlation between loan-to-value ratio and loan-to-income ratio



Note: The diagram shows the loan-to-value ratio and loan-to-income ratio for every household in FI's sample. Each dot represents one household.

The UK and Ireland have both introduced a loan-to-income cap. In these countries they have opted to word the regulation such that when implemented it does not restrict how much households may borrow. They selected a level for the cap that was high enough for most new mortgage borrowers when it was implemented. Since some borrowers were above the cap when it was implemented, the regulation allowed for a certain percentage of the banks' new loans to exceed the cap. This gave the regulation a certain degree of flexibility since the banks could allow some households with a large need for a loan to borrow more than the cap allowed. If house prices and the need for loans develop in line with income, the loan-to-income cap does not actually entail a limit, but if house prices increase faster than income, the share of households with a need for loans in excess of the cap rises. Banks are then forced to choose which households may borrow in excess of the regulation, and the overall increase in debt is limited.

FI has collaborated with the National Institute of Economic Research to analyse the effects of a loan-to-income cap set at five, six and seven times a household's disposable income.¹⁸ This analysis has shown that most variations have relatively small effects on both debt and the economy when house prices develop in accordance with FI's main scenario, i.e. house prices and income increase at approximately the same rate. The larger the limitation of a regulation, the greater the effect on the economy. According to FI's main scenario, after three years, household debt falls by 1.7–5.7 per cent compared to a scenario without a loan-to-income cap, and GDP falls by 0.3–1.0 per cent. After ten years, debt falls by 5.4–13.2 per cent.

If house prices were to instead increase faster than income for a number of

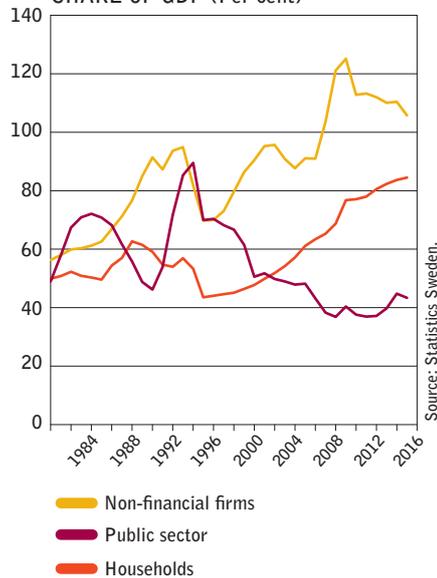
18 See FI Analysis No.5 Macroeconomic effects of a loan-to-income cap (in Swedish), May 2016

38. FIRMS' DEBTS ARE EXPECTED TO RISE FASTER (Per cent)



Note. Lending growth to corporates, annual change in per cent.

39. FIRMS' DEBTS DECLINE AS A SHARE OF GDP (Per cent)



Note. Consolidated debts in relation to GDP

years, the tested loan-to-income caps had a greater effect on limiting the increase in debt. In a scenario where house prices continue to rise at the same rate as in the past three years, debt falls by 2.0–6.1 per cent after three years compared to a scenario without a loan-to-income cap, and by 8.8–17.2 per cent after ten years.

A loan-to-income cap means that few households would be highly indebted, which mitigates the risks associated with indebtedness compared to a scenario with no regulation. This decreases the risk for and consequences of a future financial crisis, while also softening normal cyclical fluctuations.

FI currently does not have the powers necessary to implement a loan-to-income cap. A cap would not introduce any restrictions to the current market, but if house prices and debts were to continue to rise steadily, it could mitigate the subsequent risks. It is important for FI's powers to be expanded so that it is able to implement such a cap as necessary. It is also important to take into consideration the advantages and disadvantages associated with each alternative before a final decision to implement such a regulation is made.

CORPORATE DEBT

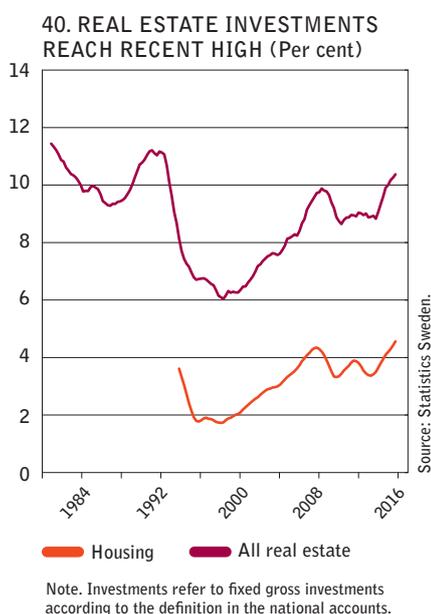
Non-financial firms finance their operations with equity and borrowed capital. Equity consists primarily of share capital and internal funds, while borrowed capital includes loans from credit institutions and market borrowing via bonds and commercial paper. Choice of financing is affected by costs, risks and tax rules. Different types of capital fulfil different needs, such as long-term borrowings for investments and short-term credit for managing cash flows. Therefore, the need to borrow, and thus the level of indebtedness, differs considerably between sectors.

The supply of credit to firms is an important function of the economy. If shocks arise, the firms' investments and other activities may decline and economic activity may therefore deteriorate. There is also a risk that indebtedness in the corporate sector will cause losses for the banks and other investors who have lent money to firms if indebtedness levels are excessive and firms ultimately experience problems repaying their debts. Firms' loans generally increase at a more irregular rate than those of households. At present, corporate loans from Swedish banks are increasing by around 2.5 per cent a year (Diagram 38). This is relatively low given the state of the economy and the low level of interest rates. Lending to firms is therefore expected to increase somewhat faster in the future according to FI's forecasts.

Currently no signs of imbalances in the corporate sector

Taking into consideration the size of the Swedish economy, corporate debt has decreased since 2009 (Diagram 39). This is largely due to a decrease in intra-group loans as a result of regulatory changes that reduced opportunities to claim interest rate deductions for internal loans.¹⁹ FI sees no clear signs that extensive imbalances have accrued in the corporate sector. The low interest rate level, however, could lead to excessively optimistic business deals, which could mean that vulnerabilities may build up in certain industries. If the economy were to suffer a sharp downturn, it would not be possible to rule out that some firms

¹⁹ Tax planning may have contributed to high indebtedness among Swedish companies, Economic Commentary No. 3, June 2012, Blomberg et al., Sveriges Riksbank.



would experience problems. Even a severe shock to the financial system that affects the supply of credit in the economy could have a negative effect on Swedish firms. However, FI judges the probability of such a scenario to be improbable at present, and firms' increasingly diversified funding could counteract such a development.

Housing investments continue to increase

Construction and real estate companies are very dependent on financing and are often of central importance during financial crises. These companies take on risk during the production phase. This risk disappears if the property is sold on but it largely remains as long as there is ownership, even if the property is then generating income. In Sweden, real estate investments rose from a very low level the decade prior to the most recent financial crisis (Diagram 40). Investments decreased during the crisis, but compared to many other European countries, the decrease was small.

There is a huge need for new residential properties in Sweden and in recent years housing investments have increased sharply. In 2015, housing investments increased by almost 20 per cent compared to 2014 and are now at their highest level in more than 20 years. Housing investments are expected to continue to increase in the future, but at a lower rate.²⁰ A substantial rise in housing investments 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.²¹ For instance, housing investments were high in the United States, Spain, Denmark and Ireland, which all perceived large falls in housing prices during the most recent crisis. But this does not apply to all countries that suffer crises, 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. FI therefore makes the assessment that the high housing investments are primarily a response to the high demand. By increasing the supply of residential properties, the rapid increase in house prices may slow down, but given the low interest rates and the high rate of investment, it is not possible to rule out that some of the investments will later prove not to be profitable. This primarily applies to investments in real estate other than residential properties, which are also at a high level despite the need not being as obvious.

Imbalances in the real estate sector, as mentioned previously, are a common cause of financial crises. In the longer term, there may therefore be a need for measures on the credit markets to counteract the build-up of vulnerabilities. FI's authorisations are also ambiguous in this area. It is therefore important for FI to also receive clear powers to take measures to counteract financial imbalances in the corporate sectors.

²⁰ See The Swedish Economy, March 2016, National Institute of Economic Research.

²¹ House prices and home building – an international perspective, The Swedish Economy, December 2013, National Institute of Economic Research (2013).



Finansinspektionen
Box 7821, 103 97 Stockholm
Street address Brunnsgatan 3
Telephone +46 8 787 80 00
Fax + 46 8 24 13 35
finansinspektionen@fi.se

www.fi.se