

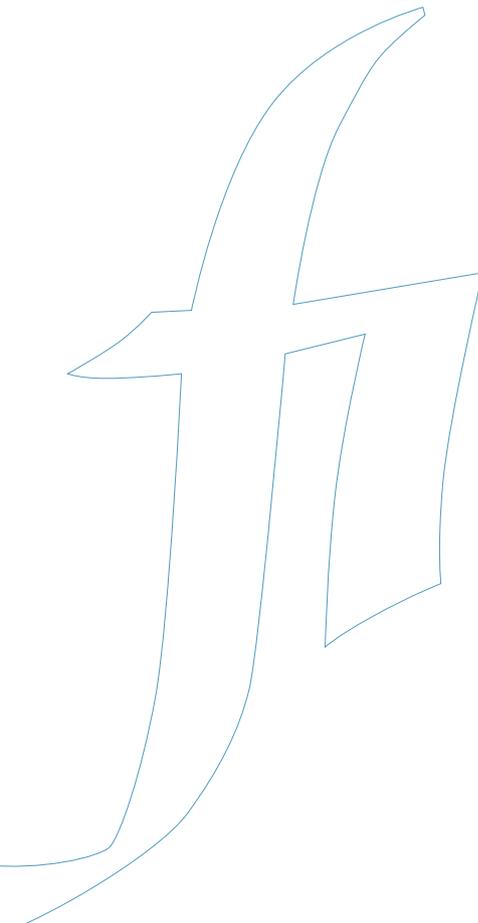


FINANSINSPEKTIONEN

Stability in the financial system

1 DECEMBER 2016





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New stability challenges

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 possible financial imbalances in the Swedish economy twice a year. This is the second report for the year. FI describes in this report the vulnerabilities and triggers that could threaten the stability of the financial system in Sweden as well as both potential additional measures and measures already taken to reduce these vulnerabilities.

THE FINANCIAL SYSTEM IS IMPORTANT BUT VULNERABLE

Why was FI given this assignment and why is it important? First, an efficient, stable financial system is necessary for the economy to function and grow. A poorly functioning financial system, or a financial system in crisis, generates extensive economic and social costs, which we have witnessed a number of times.

Second, financial firms and systems are vulnerable. Disruptions and a dip in confidence can induce firms to fail or markets to stop functioning, and since the different parts of the financial system are closely inter-linked, problems arising in one part of the system can quickly spread to other parts.

Third, firms do not face sufficient incentives or opportunities to fully manage these risks themselves, so the government must take on responsibility for systemic stability. In order to keep this from becoming too costly, the government uses regulations and supervision to prevent the emergence of threats to financial stability. It is important that the government take on this assignment, but it is not a simple matter - state intervention always creates its own problems and costs. For example, an extremely strict regulation could create a high level of stability, but at a high cost in terms of efficiency losses and high prices for important financial services. Financial regulation must always strive to achieve a balance between stability and efficiency. Swedish ambition levels and considerations also need to roughly be in line with surrounding countries to ensure that businesses do not move around to take advantage of differences in regulation.

MANAGING 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. In other words, the system must be resilient. This means that financial firms are holding enough capital, have control of their risk-taking and in general have a good organisation in their operations. However, the financial sector can create and reinforce economic problems even if the

basic functions are maintained and the financial system as such is not in crisis. FI's responsibilities were therefore expanded several years ago 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. This is a central part of FI's macroprudential supervision.

A UNIQUE SITUATION

What are the greatest challenges today? Standard rhetoric usually describes any given situation and the future as abnormally uncertain. But right now this is a very relevant description of the situation that we are facing. Internationally, and particularly in Europe, political developments are uncertain at the same time as the financial and social wounds from the financial crisis have still not healed. Many banks are weak and the public finances of several countries are stretched thin. Globally, there are questions arising about the Chinese economy's continued possibilities for driving the global economy, the potential consequences of Brexit and what could happen if the economic policies in the USA were to change.

There are also regulatory changes being implemented at an international level, which is contributing to the uncertainty. These changes affect central parts of the financial regulatory framework and a number of financial areas. Even if the aim is to improve resilience in the financial system, there is always an inherent uncertainty related to extensive regulatory changes.

Even if the economic and financial development in Sweden is and has been significantly better than in most other countries, we are facing clear and well-known challenges, primarily in terms of the greenhouse conditions that are affecting the housing market and household indebtedness. We must be observant that the historically unique combination of low interest rates and relatively strong financial growth can create problems that may be difficult to manage. We are in what is largely uncharted territory. Mapping and implementing measures to counteract this complex risk profile requires input from FI, but FI only has certain tools in its toolbox. It is therefore important that Sweden have contingency plans on a broad front within several areas of policy and from several public bodies.

Stockholm, 1 December 2016



Erik Thedén

Director General

Summary

FI makes the assessment that financial firms are currently sufficiently resilient to disruptions. Banks have large capital buffers that can function as shock absorbers in a financial crisis. The amortisation requirement that FI implemented has had a dampening effect, but the risks associated with the housing market and households' high indebtedness continue to remain at an elevated level. It may therefore be necessary to take additional measures. Looking forward, there is considerable uncertainty about international developments. There is also a high level of uncertainty about what kind of conditions the unique combination of extremely low interest rates and relatively strong economic growth in the Swedish economy will generate. This requires constant monitoring and contingency plans, not only from FI but also from other authorities.

The Swedish economy is strong and Sweden is now going into a period of rising resource utilisation and strong growth. The fact that interest rates are also extremely low creates a unique combination of circumstances. There are limited experiences of this kind, but it is obviously an environment that allows imbalances to build in the form of high assets prices. These are very important to follow, even if they currently cannot be fully identified and measured. This could affect several policy areas and may require both FI and other authorities to implement measures.

The Swedish financial system and the Swedish economy are closely linked to the global markets. In the euro zone economic growth continues to stumble, and the banking sector is reporting low profitability. Low capital levels in several systemically important banks during the year resulted in weakened confidence for many banks. The EU cooperation is also creaking at the joints, most obviously given the UK's decision to leave the EU, but also because of the uncertain domestic political situations in several countries. It is not clear how the EU cooperation will develop in the future. At the global level it is uncertain whether the emerging markets, and specifically China, will be able to pull the global economy forward. The implementation of Brexit is another factor of uncertainty, as is how economic policy in the USA will be affected by the change in presidency.

Central parts of the financial regulatory framework are being reformed, which also contributes to future uncertainties. The Basel Committee is in the final stages of its negotiations regarding the banks' capital adequacy, and within the EU changes are being prepared for the capital adequacy regulations, which also include an overview of the tools for macroprudential supervision. The Swedish National Debt Office will also decide on the minimum requirement for the banks' eligible liabilities, pursuant to the Bank Recovery and Resolution Directive, at the beginning of next year, and work is underway within the EU to implement the rules for eligible liabilities (TLAC framework). New rules went into effect for insurance undertakings as of 1 January 2016 regarding valuation, capital requirements and the capital base, and the European Commission recently submitted a proposal for a crisis management framework for central counterparties. These initiatives aim to increase resilience in the financial system, but they entail extensive changes, the consequences of which cannot be fully predicted.

There are also a number of possible shocks that could trigger events that would have a negative impact on the Swedish financial system, such as a banking crisis in Europe, a sharp correction in share prices and other risky assets or negative developments on the Swedish housing market.

BANKS SHOW SATISFACTORY RESILIENCE

A well-functioning financial system should be able to take on shocks regardless of whether they come from identified risks or unforeseen sources. FI makes the assessment that Swedish banks in general have satisfactory resilience and are able to maintain critical services even given turbulent conditions. This is because, compared to their international counterparts, Swedish banks have good profitability, low credit losses and high levels of capital, which largest consist of buffers. But mortgages and loans to real estate companies are important for banks not just in terms of credit risks but also in terms of income. A downturn in the housing market or the real estate sector could therefore have a major effect on the banks.

The capital requirements aim to ensure that banks hold sufficient capital in relation to the risks in their operations. These requirements consist of minimum requirements and buffer requirements. The buffers are to be used as temporary shock absorbers to cover losses during economic difficulties and thus prevent the banks from breaching the minimum capital requirements. Negotiations are ongoing at the international level to implement a leverage ratio requirement. If the requirement is designed as a minimum requirement, this could result in a reduction in the size of the buffer, which in turn would mean that banks would have fewer opportunities to absorb losses on their own accord. This means that direct intervention in the banks' operations by the authorities may need to occur at an earlier point in time, which would be negative for financial stability. FI therefore believes that a leverage ratio requirement should be designed primarily as a buffer requirement and not as a minimum requirement.

Swedish banks continue to have good access to funding. They have a high percentage of market funding, which means their funding base is broad, but that they are also dependent on the market's confidence. Swedish banks hold large liquidity reserves, which means that they would be able to withstand a transition period if investors were to lose confidence. The largest part of the reserves is held in USD and EUR, which is desirable since foreign currency can be difficult to access during a crisis. In terms of liquidity in SEK, the Riksbank, as a last resort, is able to provide banks with liquidity in a crisis situation.

FINANCIAL MARKETS FUNCTIONING WELL

The financial system is interconnected, in part through the markets that financial firms use to manage market risks and funding. Because of this interconnectedness, problems in one firm can spread to others. Well-functioning markets can act as an absorber of such shocks and prevent problems from being amplified and spread throughout the financial system. Well-functioning markets are therefore an important condition for financial stability.

FI makes the assessment that it is primarily the interest rate and currency markets that are systemically important in the Swedish financial system. Relatively speaking, currency markets are extremely liquid, and FI judges them to be functioning well at this point in time. Several indicators

point to strong liquidity in the fixed-income markets as well, but how this situation may change in an eventual crisis is difficult to predict.

CHALLENGING ENVIRONMENT FOR INSURANCE COMPANIES

The low level of interest rates and re-investment risks are significant challenges for insurance companies, but FI makes the assessment that they will continue to be able to handle these challenges and meet their commitments. Stress tests of Swedish insurance companies also show that they in general are strong and can handle financial shocks.

During previous periods of financial turbulence, life insurance companies have sold shares and purchased bonds with long maturities and thus exacerbated market fluctuations. Changes to the regulations have meant that companies in the future will not face as strong incentives to change their portfolios during periods of financial turbulence, even if the risk cannot be ruled out.

These changes do have a downside, however. Life insurance companies which are deficient in their risk management may take measures too late, which in turn may result in them having problems meeting their guaranteed pension commitments in the long run.

CONTINUED HIGH LEVELS OF HOUSEHOLD INDEBTEDNESS

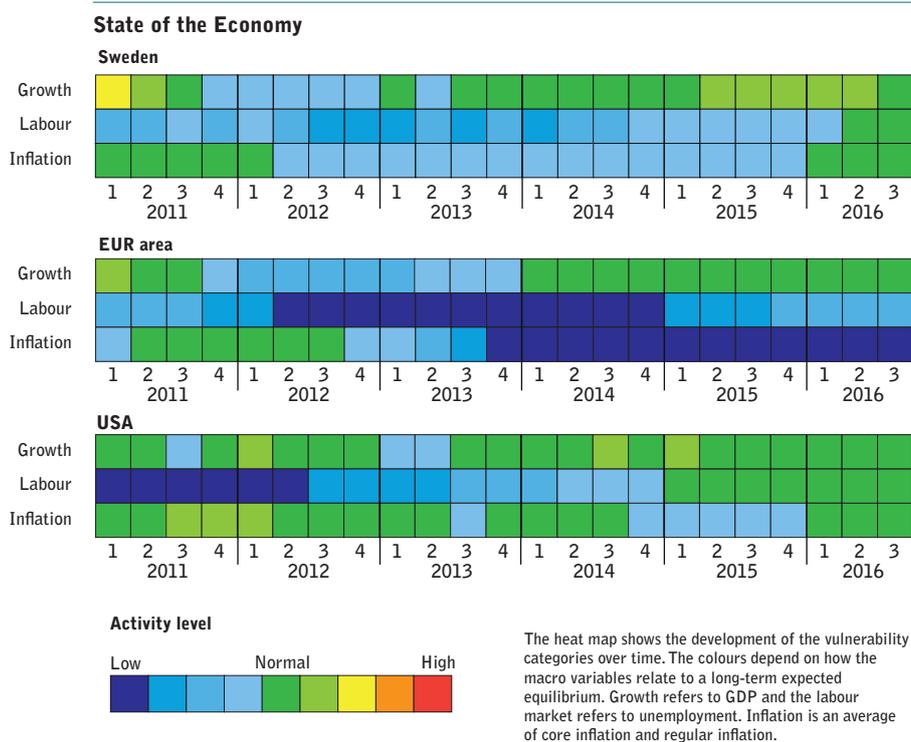
After a period of rapidly increasing house prices, growth has slowed in 2016. This slow-down occurred at the same time as the major banks gradually began to implement FI's amortisation requirement. Even if it is too early to fully evaluate the effects of the amortisation requirement, the effects on house prices and the rate at which debt is increasing to date have been in line with FI's main scenario. Prior to this, though, prices had been rising rapidly for a long time. House prices are also rising faster than households' disposable income. This is not sustainable in the long run. FI therefore makes the assessment that the risk of a fall in prices on the housing market is higher than normal.

Because the purchase of a home is largely financed by loans, this means that debts are also increasing faster than incomes. However, FI makes the assessment that indebtedness does not constitute a direct risk to stability in the financial system; households have the capacity to carry their current debt level given their incomes and assets. Even if households will be able to pay for their mortgage if the economy were to dip or interest rates were to rise, the indebtedness of households still constitutes a risk for macroeconomic development. In order to pay for their loan after such a shock, households may need to decrease their consumption. The collective actions of households can thus create or worsen a downturn in the economy. To reduce this type of risk, FI does not want to rule out additional measures to slow the growth of household debt, but the authority would like to first follow up on the effects of the amortisation requirement.

Corporate debt increased in relation to GDP over the past ten years. The real estate industry represents a large portion of the debt. Profitability in the real estate sector is currently good, but the high level of investments can entail risks. FI will therefore develop its analysis of the sector and follow its developments closely in the future.

State of the economy

The global economy continues to be marked by slow growth and extremely low interest rates. Weak growth conditions at a global level indicate that the low interest rates will continue for the foreseeable future. The low interest rates put upward pressure on asset prices and indebtedness and can increase risk-taking in the financial sector and the economy at large. For Sweden's economy, the combination of good growth and extremely low interest rates is presenting a special challenge. Imbalances may be building up and lead to stresses when interest rates start to rise again in the future.



1. GDP-GROWTH (Annual growth, per cent)			
	2015	2016	2017
Global	3,2	3,1	3,4
Emerging markets	4	4,2	4,6
USA	2,6	1,6	2,2
Euro area	2	1,7	1,5
Sweden	4,2	3,3	2

Note. 2016 and 2017 are forecasts.

Källa: IMF World Economic Outlook and NIER.

Growth in the real economy is important for financial stability, at the same time as good financial conditions and financial stability are necessary for sustainable economic growth. Economic growth is dependent on a functional financial system that allows firms to borrow to make investments and households to borrow to distribute their consumption and expenses over time. The opposite is true in that 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 greatly influenced by external factors. The financial system in Sweden is also closely linked to the global financial markets and there is a risk that shocks on these markets will spread to the Swedish economy.

GLOBAL GROWTH SUPPORTED BY MONETARY POLICY

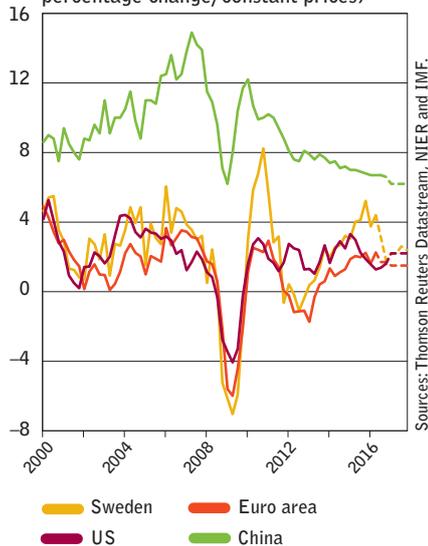
Growth in the global economy is slow and is forecast by the International Monetary Fund (IMF) to be somewhat lower in 2016 than in 2015 (Table 1). Slight recovery is expected in 2017. At the same time, global growth forecasts have been revised downward since the spring, largely due to slower growth than expected in the USA and increased political, economic and institutional uncertainty following the UK's decision in June to leave the EU (the Brexit referendum).¹ From a global perspective, monetary policies following the financial crisis in 2008 have been very expansive with the aim of stimulating inflation and growth. Central banks are expected to continue to pursue expansive monetary policies to try to support the recovery in the economy and raise the low level of inflation.²

The economic recovery in the USA has recently slowed, but the growth rate is expected to increase over the next year. Given this, it is assumed that the Federal Reserve (the central bank in the USA) will continue with its cautious normalisation of the monetary policy that was started in 2015. At the same time it is not clear how the economic policy in the USA will take shape after the change in presidency in January of next year; the president-elect has made comments about a more expansive financial policy. Emerging markets have played a key role in global economic growth after the financial crisis, at the same time as growth in, for example, China has gradually slowed (Diagram 2). China is undergoing a structural transformation toward a more service- and consumer-based economy. The results of this transition will play a major role in global growth in the future.³

Economic growth continues to progress slowly in the euro zone and in the UK. IMF has forecast that growth will slow and be dampened by increased uncertainty following the Brexit referendum. The central banks are therefore expected to keep the policy rates at very low levels. The banking sector in the euro zone is struggling with low profitability as a result of overcapacity, weak economic growth, high percentages of under-performing loans and, to some extent, the low interest rates. Low levels of capital in several systemically important banks resulted during the year in a dip in confidence from investors and the public, which has put pressure on these banks' share prices (Diagram 3). If the problems were to worsen, this could lead to an even further dip in confidence among investors. This could have a negative effect on financial stability in the euro zone and spread to Sweden, both through the financial markets and through a weaker real economy.

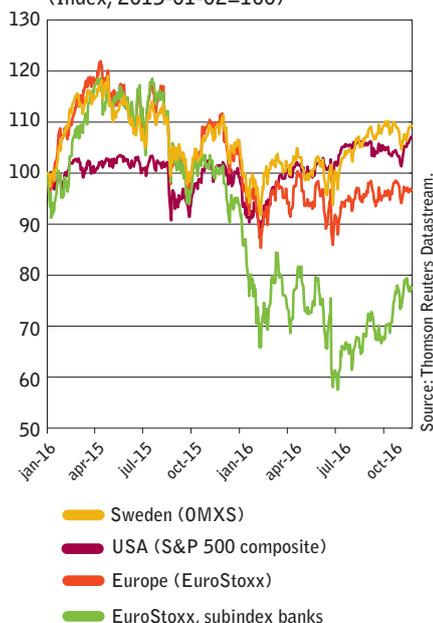
The Swedish economy has been strong in recent years and according to National Institute of Economic Research (NIER) this year Sweden is entering into a period of a high level of resource utilisation. GDP is forecast to continue to grow at a good rate in both 2016 and 2017, even if this rate is slowing somewhat⁴ (Table 1 and Diagram 2). The Riksbank believes that it will be necessary to continue with a very expansive monetary policy to bring inflation up toward the inflation target of two per cent. The repo rate is therefore expected to remain at -0.50 per cent until the

2. SWEDISH GROWTH STRONGER THAN IN THE EURO ZONE (Annual percentage change, constant prices)



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

3. EUROPEAN BANKING SHARES DEVELOP WORSE THAN THE MARKET IN GENERAL (Index, 2015-01-02=100)



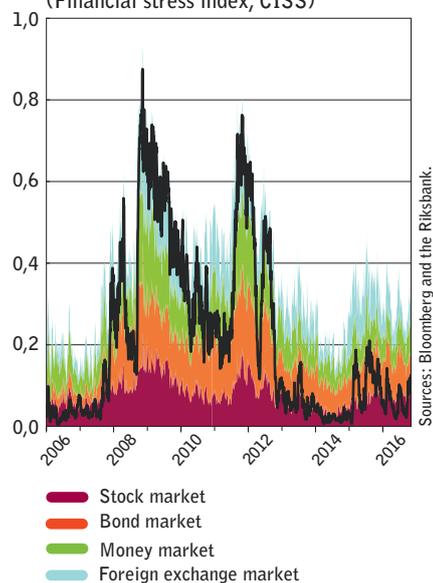
1 World Economic Outlook, October 2016, International Monetary Fund (IMF).

2 Ibid.

3 Ibid.

4 The Swedish Economy, August 2016, the National Institute of Economic Research.

4. FINANCIAL STRESS HAS FLUCTUATED DURING THE YEAR (Financial stress index, CISS)



Note. The CISS stress index is developed by the Riksbank which uses method that is similar to the one ECB uses for its European stress indices. A value of 1 indicates a historically high level of stress and a value of 0 indicates a historically low level of stress.

5. 10-YEAR GOVERNMENT BOND RATES HAVE INCREASED SINCE JUNE (Per cent)



beginning of 2018, and the Riksbank has said that it is ready to extend its purchases of treasury bonds.⁵

RAPID RECOVERY AFTER BREXIT REFERENDUM

Indicators of financial stress are at relatively low levels but have fluctuated considerably during the year (Diagram 4). Most stock exchanges recovered quickly after the fall following the Brexit referendum in June, and even bond rates have slowly recovered since then. After the US presidential election long-term interest rates increased sharply, primarily as a result of the changed expectations regarding a more expansive financial policy in the USA and higher growth (Diagram 5). Since the financial crisis, the price of risky assets has increased sharply (Diagram 6).

Political uncertainty amplifies uncertainty surrounding developments in Europe

There is a risk that rising political uncertainty will slow the already weak growth in Europe. Several important presidential and parliamentary elections will be held in 2017, and their outcome may affect the EU's future focus and collaboration possibilities with regard to economic and financial matters. Furthermore, the final effects of the UK's withdrawal from the EU are still not clear and the conditions for the withdrawal have not yet begun to be negotiated. The outcome of the negotiations will also be important for the European financial markets, since parts of London's financial sector may opt to move outside of the UK. As a whole, the increasing political uncertainty is dampening economic growth and thus putting additional pressure on profitability in the European financial sector.

EXTREMELY LOW INTEREST RATES INTRODUCE RISKS

Since the global financial crisis in 2008, the economies of many developed countries have been marked by recessions. In order to stimulate growth, central banks have applied an unconventional monetary policy for a long time, namely low or negative interest rates and significant purchases of bonds. There is limited experience regarding the consequences of maintaining such conditions over a more drawn-out period of time. Countries like Sweden and the USA have also seen an upswing in their economies in recent years and subsequently falling unemployment and rising income. In an environment with both low interest rates and a strong economy, there is a risk that asset prices and debts will increase sharply, which could contribute to the build-up of imbalances and vulnerabilities.

Risk for build-up of imbalances due to low interest rates

The low interest rates are a part of a downward interest rate trend that began in the 1980s and was enhanced by the economic downturn following the global financial crisis. This long-term trend is due in part to changes in demography, a decrease in the growth rate of production, the widening income divide and greater demand for secure assets. Global savings have therefore increased in relation to investments and real interest rates have fallen, which has also led to downward pressure on nominal interest rates.⁶ As a whole, this would mean that developed countries are facing a long period of low interest rates combined with low growth

⁵ Monetary Policy Report, October 2016, the Riksbank.

⁶ Summers, L (2014), "U.S. Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound", Business Economics 49(2).



and low inflation. An extended period of low interest rates could create difficulties for different parts of the financial sector. Life insurance companies may find it difficult to generate sufficiently high returns to meet their commitments in the future. A drawn-out period of low interest rates also risks entrenching current problems at European banks and further weakening the sector's resilience. Negative interest rates mean reduced interest rate income for banks and during periods of economic stagnation demand for loans will also fall.

There is a risk that banks and life insurance companies may take excessively large risks in their investments and lending to meet return requirements, which impairs the quality of their assets. Swedish banks and life insurance companies in general are in better shape than many European competitors (see Banks' earnings and capital, Banks' funding and liquidity risks and Markets and insurance companies), but Swedish life insurance companies in the long run will need to manage the same types of challenges as the rest of Europe in an environment of persistent low interest rates and economic stagnation.

Risk that prices will fall if the interest rates suddenly rise

For financial investors, low interest rates mean low return. In order to get a higher return, they need to find riskier assets. This may lead to a rapid increase in the price of these assets. If prices no longer reflect the assets' risks, financial vulnerabilities may build up, which in turn increases the risk that asset prices will undergo a strong correction. The low interest rates also make it cheap for households to borrow, which could contribute to debt growth and rising house prices (see Indebtedness and the Swedish economy).

The high level of asset and share prices is not necessarily unreasonable at today's interest rate levels, but if interest rates begin to rise, prices of risky financial assets and homes may fall. Sudden price corrections may mean that large asset volumes will need to be redistributed in a short period of time. This may cause major losses, stress and liquidity problems on the financial markets. The combination of suddenly rising interest rates and a fall in house prices may mean that households either choose or are forced to adjust their consumption, which could have a significantly negative effect on the economy (see Indebtedness and the Swedish economy).

IMF has evaluated Sweden's finance sector

Since 1999 the International Monetary Fund (IMF) has conducted regular assessments of the financial sector as part of its Financial Sector Assessment Program (FSAP). An FSAP assessment is an extensive, in-depth analysis of a country's financial sector and takes a closer look at, for example, the finance sector's resilience via stress tests, analyses of systemic risks, contagion risks and the ability of the national authorities to manage potential stress in the system. In the wake of the financial crisis a decision was passed that FSAP assessments would be mandatory for countries with systemically important financial sectors and that they would be conducted on a regular basis and at least every five years. Sweden is one of the 29 countries for which FSAP assessments are mandatory.

The previous FSAP assessment in Sweden was conducted in 2011 and a new one was conducted in 2016. IMF visited Sweden and FI on two occasions, once during the spring and once during the autumn. Prior to the visits FI has provided the IMF with comprehensive documentation and data. On 17 No-

vember, the IMF presented its report on the Swedish financial sector and the authorities' work with financial stability. IMF notes that progress has been made since the FSAP assessment in 2011, but that there are macroeconomic risks linked to the Swedish financial sector.

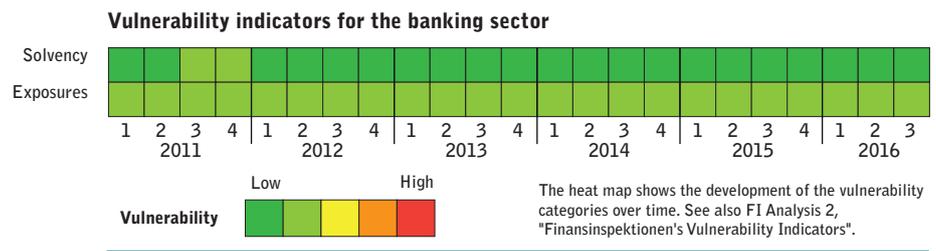
In its report the IMF makes 20 recommendations for managing the risks and deficiencies that were identified. Just over half of these target FI or FI in combination with other authorities. For example, IMF identifies the risks associated with rising household debt and recommends that the amortisation requirement FI implemented during the year be supplemented with a debt-to-income limit. In addition to the debt-to-income limit, the IMF believes that additional measures are needed to reduce imbalances in the housing market. For example, the interest rate deduction for mortgages should be terminated and additional measures to increase the supply of homes should be implemented.

Furthermore, the IMF recommends that FI's macroprudential mandate be clarified so that FI can take necessary measures in time. IMF also believes that FI should implement a leverage ratio requirement for the banks.

The results of the IMF's stress tests indicate good resilience in the Swedish financial sector and are described in more detail in the section Banks' operations and capital, Banks' financing and liquidity risks and Markets and insurance companies.

Banks' earnings and capital

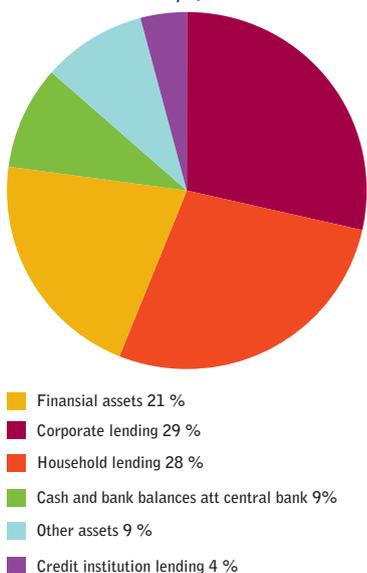
FI makes the assessment that Swedish banks are demonstrating satisfactory resilience. The four major systemically important banks meet FI's capital requirements, and stress tests show that they are expected to do so even during periods of stress. Swedish banks have large capital buffers and good profitability in international comparison, which makes them resilient to shocks, but inconveniently designed international capital requirements may also lock in parts of these buffers and in a worst-case scenario weaken resilience.



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 reduces the risk that problems will spread to other parts of the financial system.

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

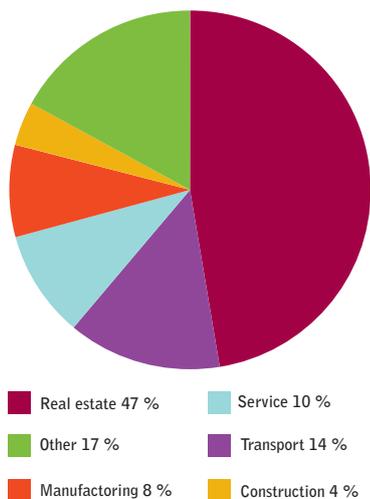
7. DISTRIBUTION OF THE FOUR MAJOR SWEDISH BANKS' ASSETS (Per cent, Q3 2016)



LARGE, INTERCONNECTED BANKING SYSTEM

The Swedish banking system is large and interconnected. There are currently around 120 banks, credit market companies and other credit institutions with authorisation from FI to conduct business in Sweden. The institutions vary in size, business focus and complexity. The four, major systemically important banks dominate the market, and these banks are large in relation to not only the Swedish banking system but also the Swedish economy. They represent approximately 85 per cent of the Swedish banking system's total assets and their total assets (including foreign assets) correspond to approximately 400 per cent of Sweden's GDP. Problems arising in any of these systemically important banks could spread quickly to other financial firms. In order to enhance the resilience of the Swedish financial system and protect stability, FI places particular focus on its supervision of the four major banks and places very high requirement on their capital levels and liquidity reserves.

8. DISTRIBUTION OF CORPORATE LENDING (Per cent, Q3 2016)



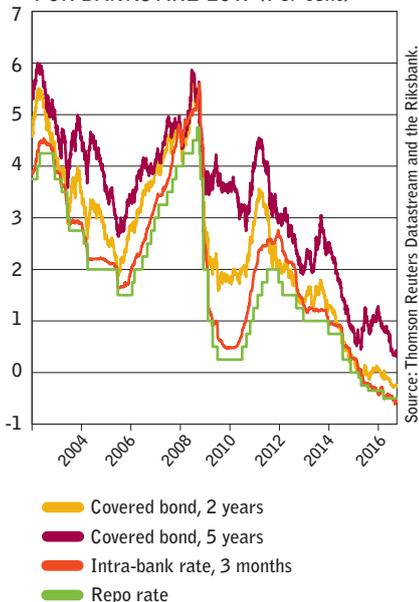
Source: FI.

Large portion of banks' lending is related to real estate

The composition of the four major banks' balance sheets varies to a certain extent based on their business model and how they fund their business. What they do have in common, however, is that lending to households and corporates constitutes the largest part of their total assets (Diagram 7). Lending to households and non-financial firms has represented a stable share of the banks' assets in recent years and lies at around 60 per cent of the four major banks' total assets.

Close to 65 per cent of the banks' total lending to the public⁷ is related to residential property or other real estate. Of their lending to households, around 85 per cent is for mortgages, and around 50 per cent of their lending to non-financial firms is for real estate-related operations (Diagram 8). Mortgages and loans to real estate companies are thus an important part of banks' income and financial results. A downturn in the housing market or the real estate sector could have a major effect on the banks' operations.

9. FUNDING RATES FOR BANKS ARE LOW (Per cent)



Interest rates are exceptionally low

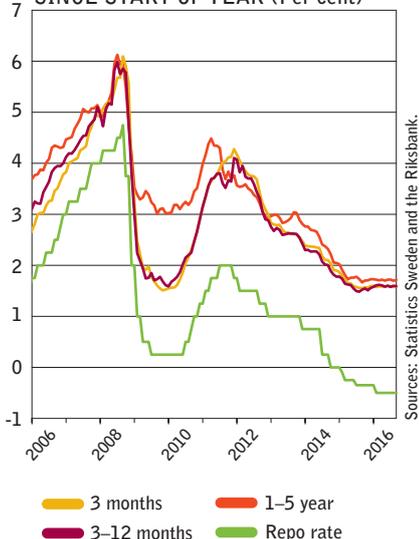
The interest rate level in Sweden and abroad continues to be low, which is reflected in the interest rates for banks' financing and lending. In Sweden, the inter-bank interest rate and rates on covered bonds have fallen in conjunction with the Riksbank's lowering of the repo rate in recent years (Diagram 9). Lending rates for households and corporates have also fallen since the end of 2011, although mortgage rates and lending rates for non-financial firms have basically remained unchanged over the past six months for all maturities (Diagram 10). The difference between interest rates for large and small firms has decreased in recent years and is currently small from a historical perspective (Diagram 11).⁸

Banks' earnings still stable

Swedish banks continue to have good profitability despite interest rates being exceptionally low (Diagram 12). In the third quarter of 2016, the four major banks reported a total profit of almost SEK 22 billion. Their return on equity on average was more than 13 per cent. Compared to six months ago, both the return on equity and total profit of the major banks increased slightly (Diagram 13).

Good earnings contribute to a stable financial system, as they reinforce the banks' resilience to shocks. The banks' earnings allow them to absorb losses using profits instead of capital. If the shocks nevertheless cause loan losses that need to be covered by equity, good and stable earnings may support the rebuilding of the banks' own funds.

10. MORTGAGE RATES REMAIN AT LOW LEVEL SINCE START OF YEAR (Per cent)

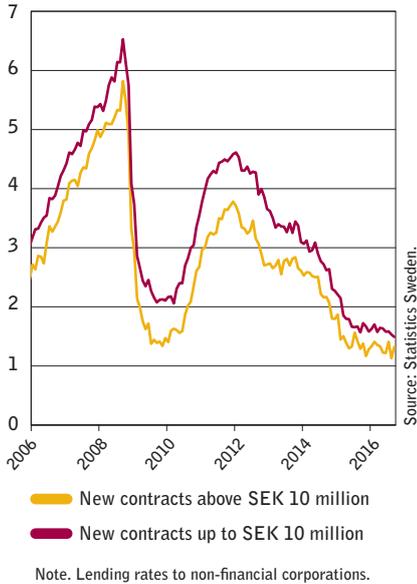


Since the assets of the major banks largely consist of lending to the public, interest rates on both deposits and lending and the banks' issued debt instruments are important factors for their earnings. During Q3 2016, net interest income and net commission income were the largest contributors to the major banks' earnings, approximately 55 and 30 per cent, respectively. Interest income from the major banks' loans to the public is the most important component of the net interest income. The fact that the banks are still earning on their lending to the public is because their interest margins are high. Diagram 14 shows FI's estimate

⁷ Refers to lending to households, non-financial firms and the public sector.

⁸ 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.

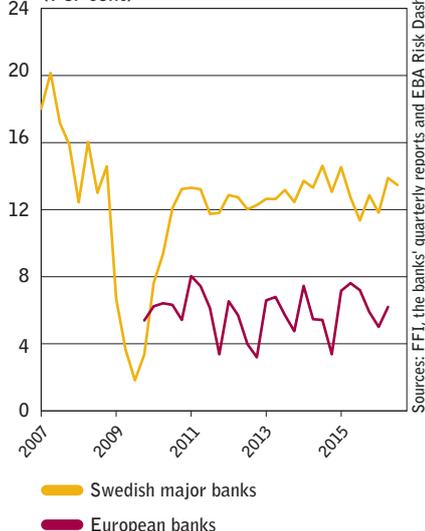
11. LENDING RATES AT RECORD-LOW LEVEL (Per cent)



12. PROFITS FOR MAJOR SWEDISH BANKS ARE HIGH (SEK billion)



13. MAJOR SWEDISH BANKS' RETURN ON EQUITY IS HIGH (Per cent)



of the banks' gross margin on mortgages. The margin has risen since the global financial crisis in 2008 and is at a historically high level. In 2016 it increased by approximately 0.2 percentage points. Net commission income consists of primarily all of the fees from credit cards, payments and asset management.

The credit losses of the major banks continue to be low both from a historical perspective as well as in international comparison, and they have held steady for the past five years (Diagram 15). The combination of low loan losses and high profitability strengthens the Swedish banks' resilience to shocks.

RESILIENCE OF THE BANKS IS SOUND

The most important aim of regulation and supervision of banks is to prevent them from experiencing problems of such a scale that they fail by ensuring that they have sufficient resilience to manage problems that arise. This is achieved in part through capital requirements, which aim to ensure that the banks hold sufficient capital in relation to the size of the risk in their operations. Well-capitalised banks are a prerequisite for a resilient, stable financial system.

The capital requirements are broken down into minimum requirements and buffer requirements. The minimum requirement amounts to 8 per cent of risk-weighted assets and may not be breached. If a bank's own funds fall below the minimum capital requirement, there is a risk that the bank will lose its authorisation to conduct business. This means that the bank could be wound down, either through liquidation or by being placed in resolution. In the latter option, the Swedish National Debt Office is responsible for managing the banks and its operations in order to avoid shocks to the financial system.

If the buffer requirements are breached, the consequences are not as serious. For example, the bank is limited in its possibilities for paying dividends, making coupon payments and committing to pay variable remuneration such as bonuses.⁹ The restrictions aim to allow the banks to restore their capital levels. The buffers can be viewed as shock absorbers to cover losses during bad times and thus prevent the firms from breaching the minimum requirements. This means that large buffers make the banks more resilient to losses, which is good for the stability of the financial system.¹⁰

Swedish banks have high levels of capital in terms of the risk-weighted capital requirements

Major Swedish banks continue to meet the capital requirements. Their average own funds are just under 27 per cent of their risk-weighted assets, which exceeds the average requirement of 24.5 per cent (Diagram 16) and is significantly higher than the minimum capital requirement in Europe (Diagram 18). The combined buffer requirement for the major Swedish banks amounts on average to 6.3 per cent. This is signifi-

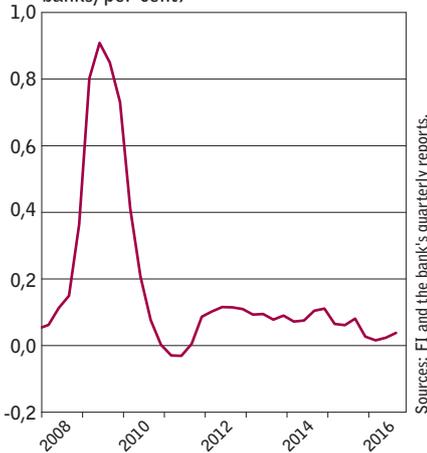
⁹ The banks must also submit a capital conservation plan that shows how the institution within a reasonable amount of time will achieve the combined buffer requirement. If FI makes the assessment that the measures set out in the plan will not restore the institution's CET 1 capital, FI must intervene.

¹⁰ For more information about the components of the capital requirement, see Swedish Banks' Capital Requirements, September 2014, Chapter 2 of FI's memorandum (Ref. 14-6528). http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapitalkrav-svenska-banker-140910ny.pdf.

14. THE BANKS' MARGINS ON MORTGAGES HAVE GROWN (Per cent)

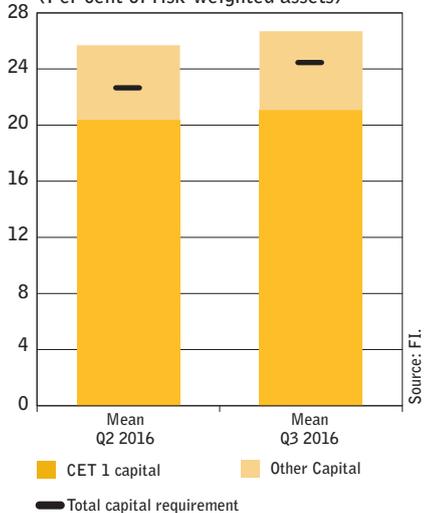


15. MAJOR BANKS' CREDIT LOSSES ARE LOW (Average, major Swedish banks, per cent)



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

16. MAJOR BANKS MEET CAPITAL REQUIREMENTS WITH GOOD MARGIN (Per cent of risk-weighted assets)



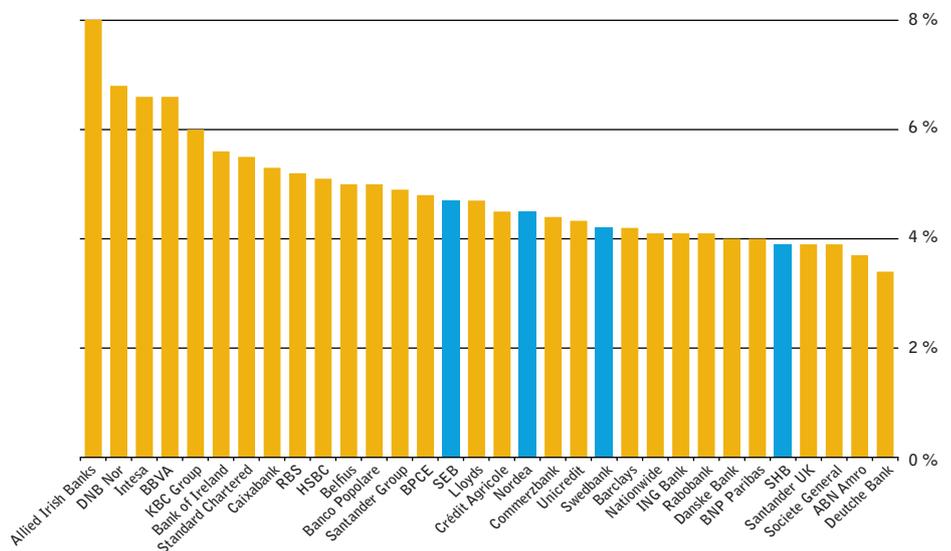
Note. The capital levels refer to an average of the four major Swedish banks. FI has not yet established the total capital requirement for Q1 2016 for the major Swedish banks.

cantly higher than the lowest allowable buffer requirement in the EU, which is 2.5 per cent.¹¹

High capital requirements mean that the major Swedish banks have a lot of capital compared to other European banks, measured in relation to their risk-weighted assets. During the past year, the CET 1 capital ratio on average has been approximately 6.5 percentage points higher for major Swedish banks than for European banks. The major banks' average CET 1 capital ratio amounted to approximately 21 per cent in the third quarter of 2016, which is higher than in the previous quarter (Diagram 19).

However, when looking at Tier 1 capital in relation to non-risk-weighted assets, which is called "the leverage ratio", the major banks do not score as high as the other European banks (Diagram 17). The reason for this is that the leverage ratio, unlike the risk-based capital requirements, does not take the risk of the assets into consideration. Credit losses have been low in Sweden for the past 20 years, and Swedish banks have a high share of assets that are typically assigned a low risk, such as mortgages. This difference is big in comparison with the development in, for example, Ireland and Italy, where credit losses have been large. This is why Swedish banks have low risk weights in international comparison, which results in the banks not appearing to be as highly capitalised in terms of the leverage ratio. The leverage ratio also includes assets with very low risk, such as treasury bonds and investments with central banks, which can be quickly and easily sold and purchased. The banks' leverage ratios therefore vary from quarter to quarter.¹²

17. LEVERAGE RATIO EUROPEAN AND SWEDISH BANKS (Per cent, Q2 2016)



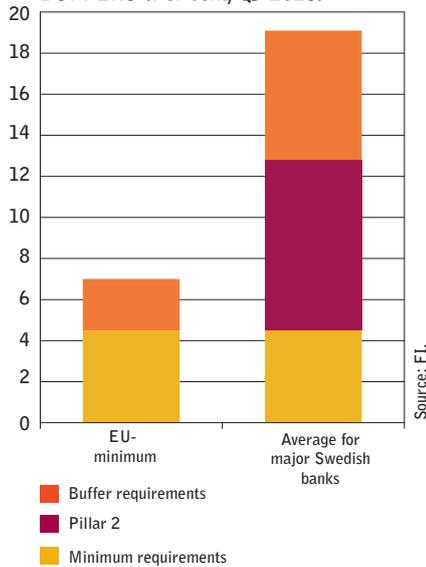
Note. Refers to fully loaded leverage ratios as of Q2 2016 according to the banks' interim reports, with exception for RBS using transitional rules. Figures from ING bank and Intesa are taken from analyst presentations from August 2016.

Sources: The banks' quarterly reports.

11 Not taking into consideration the transition rules. In 2016, the transition rules allow the capital conservation buffer to amount up to 1.56 per cent. Sweden has not implemented this transition rule.

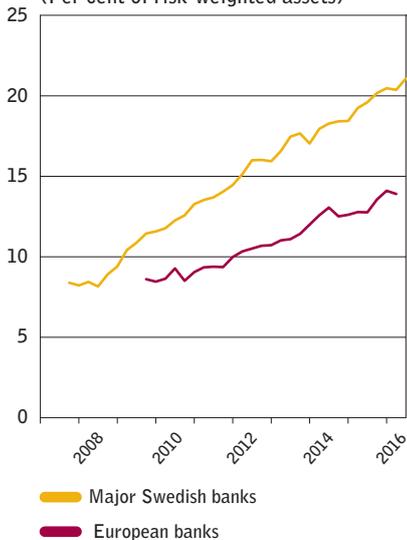
12 The Swedish banks' leverage ratio has decreased slightly since Q4 2015. This is due in part to the resolution fee that is based on the bank's total assets at the end of the year, which offered the banks incentives to temporarily decrease their holdings of assets with very low risk.

18. THE MINIMUM REQUIREMENT SUPPLEMENTED WITH CAPITAL BUFFERS (Per cent, Q3 2016)



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

19. CET 1 CAPITAL RATIO HAS CONTINUED TO RISE (Per cent of risk-weighted assets)



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

Sources: FI and EBA Risk Dashboard.

Even if there currently is no statutory requirement on a leverage ratio, international discussions are underway about how such a requirement should be designed. FI Analysis No 7, “Leverage ratio as a minimum requirement reduces banks’ buffers”, shows that if the leverage ratio requirement is designed as a minimum requirement it could reduce the buffer, which would have a negative impact on financial stability. If the requirement is instead designed such that it in full or in part consists in practice of a capital buffer, the positive effects would be kept during good times while avoiding the negative side effects during a stressed scenario (see Leverage ratio as a minimum requirement reduces banks’ buffers).

Leverage ratio as a minimum requirement reduces banks’ buffers

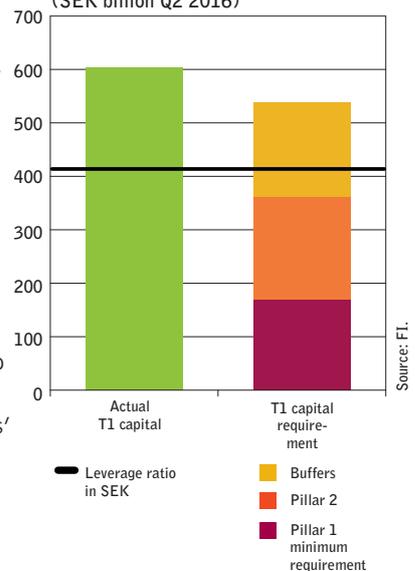
The idea behind having buffers in the capital requirements is for them to act as a shock absorbers during a financial crisis. Large buffers make a bank more resilient to losses since the buffers reduce the probability that the bank will breach the minimum requirements following a given loss. This also reduces the risk that problems will spread to other parts of the financial system.

At an international level, there are plans to introduce a leverage ratio requirement of 3 per cent, probably as a minimum requirement that supplements the current risk-based minimum capital requirement. The aim of the requirement is to limit the banks’ debt ratio as well as the risk that the banks’ internal models would lower the risk weights more than what is justified given the actual level of risk. A leverage ratio requirement could therefore have positive effects and make the banks’ capital adequacy more robust.

The consequences of implementing a minimum requirement of 3 per cent on the banks’ leverage ratio would vary by country. In Sweden, a minimum requirement of 3 per cent would not raise the current total capital requirements for the major banks, although it would raise the minimum capital requirement, i.e. how much capital the major Swedish banks must hold not to risk being placed in resolution (Diagram 14). A leverage ratio requirement that is implemented as a minimum requirement would also mean that the size of the buffer would shrink and that the banks would no longer be able to absorb as large losses without risking being placed in resolution. For a given total capital level, the consequence can thus be that the market will lose confidence in the bank at an earlier point in time if losses occur. This would weaken financial stability.

In other words, the design of the leverage ratio requirement – as either a minimum capital requirement or a buffer requirement – can play a major role in the consequences of the requirement. Finansinspektionen believes that in a stressed situation it should be possible for the authority to allow banks to temporarily breach the leverage ratio requirement. If the requirement is

20. TIER 1 CAPITAL AND TIER 1 CAPITAL REQUIREMENTS FOR THE MAJOR SWEDISH BANKS (SEK billion Q2 2016)



designed such that it in full or in part consists in practice of a capital buffer, the positive effects would be kept during good times while avoiding the negative side effects during a stressed scenario. This would benefit financial stability.¹³

Stress tests show resilience even under extreme stress

An important method for evaluating banks' resilience is to use stress tests. FI and international authorities regularly stress test the Swedish banks. The stress test may be designed differently, but they have a shared objective in that they assess a bank's capacity for meeting extreme but still possible crisis scenarios. Over the past year, a number of stress tests have been conducted of the four major Swedish banks, for example by the IMF, the European Banking Authority (EBA), FI and the Riksbank. The results of the stress tests demonstrate considerable resilience, but also the importance of having high buffers in the capital requirements.

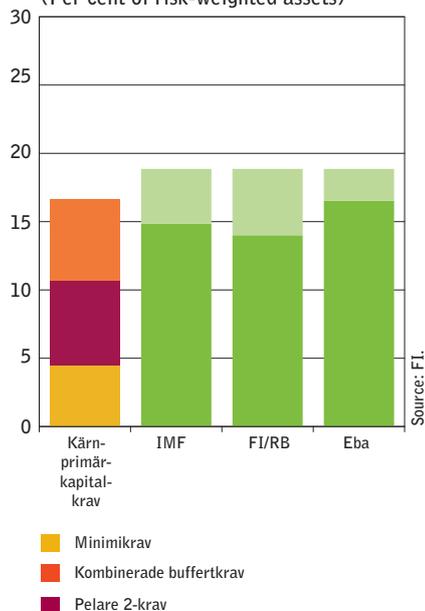
In 2016, three different stress tests were conducted that used a similar macroeconomic scenario as the one developed by the European Systemic Risk Board (ESRB) in collaboration with the European Central Bank (ECB). In the scenario, the economy moves into a significant recession and is marked by rising unemployment as well as worsening market conditions in the form of a significant fall in prices of both commercial properties and residential properties.

In the worst outcomes of the stress tests, the banks' CET 1 capital ratio fell by on average 4.9 percentage points. The weighted average of the combined buffer amounted to 6 per cent at the end of 2015. This means that the banks' CET 1 capital does not fall more than the combined buffer requirement, even given very serious scenarios. The Pillar 2 capital add-ons were not breached at all. Diagram 21 shows the outcomes of the different stress tests compared to the weighted average of FI's CET 1 capital requirement for the major Swedish banks as at 31 December 2015.

Comparing the outcomes of different stress tests conducted by different organisations is in general rather difficult. The assumptions vary with regard to macroeconomic stresses and the method used to translate the macroeconomic scenario to losses and other negative effects on the banks' capital. The largest difference between the stress tests is that the EBA only uses the macroeconomic scenario created by ESRB and ECB, while the IMF and FI and the Riksbank also included a more serious assumption regarding the developments to the interest rate and currency markets.

Because the IMF's and FI/the Riksbank's joint stress test include a more serious scenario, the outcome also becomes a more powerful reduction in the CET 1 capital ratio of the four major Swedish banks compared to the stress test conducted by the EBA. As a whole, the conclusion is made that, regardless of who conducted the stress test and the method that was used, the buffers of the Swedish banks manage to absorb the losses that arise under extreme stress. The four major Swedish banks are thus so well equipped that they are expected to be able to withstand extreme shocks.

21. OUTCOME OF INTERNATIONAL STRESS TESTS 2016
(Per cent of risk-weighted assets)



Note. Faded areas in the diagram illustrate the decrease in the CET 1 ratio after three years in each stress test's severe scenario and can be compared to the buffer requirements (in red). The diagram also shows the average outcome of EBA's stress test, which in addition to the four major Swedish banks also included 47 large European banks.

13 See FI Analysis No 7 (2016), "Leverage ratio as a minimum requirement reduces banks' buffers".

FI also conducted another stress test in 2016¹⁴ on the major Swedish banks and credit institutions to assess the need for a capital planning buffer. This stress test has a direct link to FI's annual supervisory assessment of the banks' capital needs. The test differs from the stress tests conducted by the IMF and the EBA since FI does not use underlying macroeconomic assumptions to calculate the outcome. Instead, the various changes, for example in the form of credit losses and risk weights, are calculated as a sensitivity analysis where a difficult, but not improbable, shock occurs. More specifically, the shocks should correspond to events that are expected to occur between three and ten times a century. However, instead of linking these shocks to an explicit scenario, the risk parameters are stressed directly. The outcome of FI's stress test for assessing the capital planning buffer was in line with the outcome of EBA's stress test for the four major banks.

MEASURES FOR MANAGING WEAKNESSES IN INTERNAL MODELS

Risk-based capital requirements mean that banks must hold more capital for exposures that are judged to have a higher risk. FI believes that capital requirements should be risk-based to create incentives for banks to apply sound risk management. Following an assessment by FI, banks may receive authorisation to use internal models to calculate the risk level of their assets and thus their capital requirements. The idea behind these internal models is that banks are the most knowledgeable about their customers, in part due to their history, and the most knowledgeable about the risks in their lending. At the same time there is a risk that banks will use the models to minimise their risk weights since it is in their interest to have low capital requirements.

FI supervises the banks' use of their internal models. As a supervisory measure, FI may add capital to Pillar 2 for deficiencies in the models and risks that are not captured by the models. The historical losses that the banks use in their internal models for lending to corporates are low and FI makes the assessment that this has resulted in the risk weights being lower than what is justified. Since the banks' risk weights and capital requirements should allow for future negative outcomes and periods of high losses, FI established new methods during the spring of 2016 that will be used in the supervision of the internal models.¹⁵ Through these methods, FI prevents the risk-weighted assets from being too low. This means that the capital requirement is at a level that better corresponds to the risks.

Discussions are also being held at an international level to ensure that the internal models do not result in capital levels that are too low. The discussions revolve around limitations to the actual models. FI supports these efforts to introduce tougher requirements on the internal models.

However, there are also proposals to implement supplementary capital requirements that are not as sensitive to risk. One example of this is a floor for the risk-weighted assets that is based on standardised calculations. If the capital requirements were to become less sensitive to risk, the banks would face greater incentives to decrease their capital require-

14 See Stress test methodology for assessing the capital planning buffer, August 2016, in FI's memorandum (Ref. 15–11526).

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

ments by moving assets with low risk weights from their balance sheets. This could be done, for example, via a securitisation. These types of transactions can be implemented for different purposes and thus also be structured in different ways. To date, securitisations have not been common in Sweden, unlike in other European countries and in the USA. Due to stricter capital requirements, and if future capital requirements are less sensitive to risk, there will be greater incentives to pursue certain types of securitisation, even for Swedish banks. FI has noted that several banks already now are considering different options to change their balance sheets or decrease their credit risk in this way. FI sees some stability benefits in a development where the Swedish demand for credit can be met by a more diversified base of capital and funding sources and not just the banking system. However, securitisation can lead to new risks, which can increase the vulnerability of the financial system (See Securitisation and flowback risks).

Securitisation and flowback risks

A securitisation allows banks to transfer credit risk to investors without affecting banks' relationships with their customers. The transaction can be structured differently depending on what the bank's intentions for the securitisation are beyond risk management. Some types of securitisation can be used as a source for funding while other types of securitisation are mainly used to reduce the total capital requirement by transferring the credit risk without changing the bank's responsibility for its funding of assets. The regulations allow banks to reduce their capital requirement on the condition that a significant credit risk is considered to have been transferred to investors.

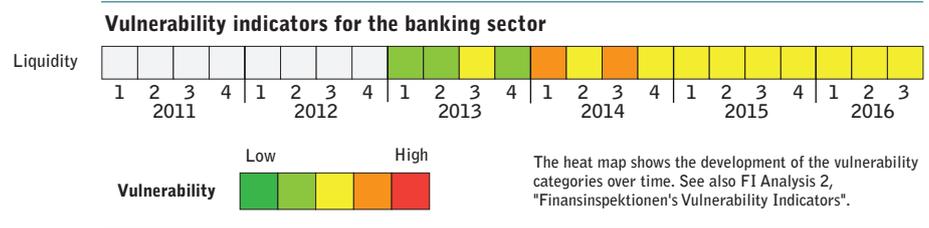
However, there are risks associated with these types of transactions, for example when the market is not stable. These risks are realised if the investors in the instruments that are used in a securitisation do not want to extend their holding, since the transaction's capital requirement-reducing effect is thus terminated. If the bank cannot refinance the transaction or enter into a new transaction, it is faced with two options when the underlying loans fall due. The bank can either renew the loans or demand repayment and cancel the loans that were previously securitised. If the loans are renewed, the bank once again is responsible for the credit risk. This results in a higher capital need since the credit risk then returns to the bank's balance sheet and thus is subject in full to the capital requirements. FI calls this type of risk "flowback risk". If the bank instead chooses not to renew the loans, or because of the higher capital need cannot renew them, the supply of loans in the economy is affected negatively. Lenders may be forced to repay a loan, despite a need for the loan and expectations that the loans will be extended beyond the original, agreed maturity date. Securitisation thus constitutes a risk, both for the bank in question and the financial system.

In a consultation publication published on 1 December 2016 FI describes its view on these risks.¹⁶ The memorandum also describes the capital assessment method that FI intends to use to assess banks' Pillar 2 capital requirements for flowback risks during securitisation.

¹⁶ See Consultation Memorandum 1 December 2016, Ref. 16-17820 for more details.

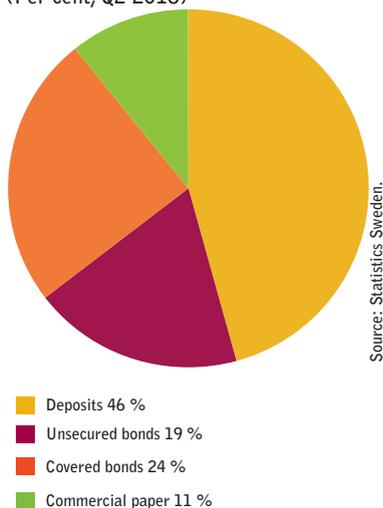
Banks' funding and liquidity risks

The major Swedish banks obtain a relatively large share of their funding from the wholesale market, which is not covered by the deposit insurance scheme. Covered bonds are an important instrument for such 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 reserves, which would enable the banks to withstand a transition period if investor confidence were to wane. In the event of a widespread crisis, the law grants the Riksbank the right to provide liquidity support as a lender of last resort.



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 may find it difficult to find funding and help customers with loans and other financial services. In the long run, a loss of confidence would introduce problems for stability in the Swedish financial system as well as the real economy.

22. DEPOSITS MAKE UP FIFTY PER CENT OF THE BANKS' FUNDING (Per cent, Q2 2016)



Note. The diagram is based on data for Swedish monetary financial institutions (MFI), which are predominantly the major Swedish banks. MFI includes the banking group's mortgage institutions.

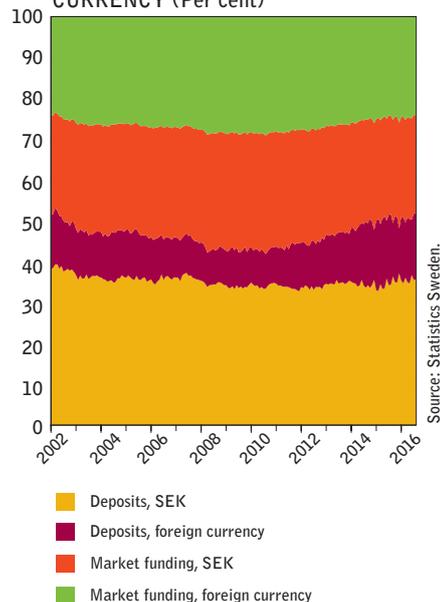
SWEDISH BANKS' FUNDING STRUCTURE

Swedish banks fund themselves through deposits from households and companies and by borrowing on the financial markets through bonds and certificates (Diagram 22). 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 currency breakdown gives a rough indication of the extent to which 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 23). Deposits in SEK come primarily from households and are covered by the deposit insurance scheme.¹⁷ Deposits in foreign currency come from both households and professional actors. The parties that fund the banks through their securities are almost exclusively professional agents.

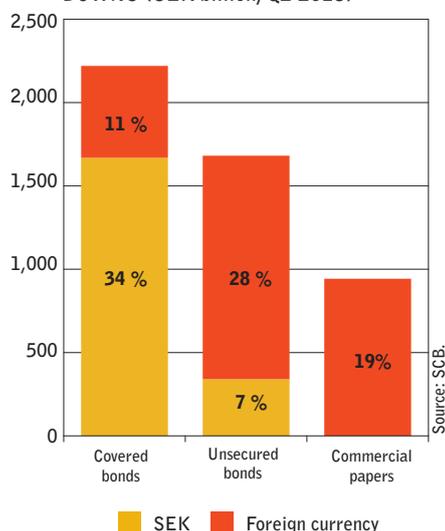
¹⁷ In Sweden, as in most countries in the western world, the state has set up a deposit insurance scheme to reduce the risk of bank runs. Deposit insurance means that the state guarantees the customers' deposits with institutions registered with the scheme. The guarantee comes into force if an institution goes bankrupt or when FI decides that it will enter into force. The state then reimburses capital and accrued interest up to a maximum amount corresponding to SEK 950,000 per person and institution.

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



Note. The diagram is based on data for Swedish monetary financial institutions (MFI), which are predominantly the major Swedish banks. MFI includes the banking group's mortgage institutions.

24. DIFFERENT SECURITIES HAVE DIFFERENT CURRENCY BREAK-DOWNS (SEK billion, Q2 2016)



Note. The diagram is based on data for Swedish monetary financial institutions (MFI), which are predominantly the major Swedish banks. MFI includes the banking group's mortgage institutions.

The major Swedish banks have significant operations abroad, both in other Nordic countries and in the rest of Europe. In order to issue credits in foreign currency, a large portion of the bank's market funding is generated through securities in foreign currency. It can also be cheaper for banks to borrow in foreign currency than domestic currency, even if the purpose is to fund Swedish assets. Derivatives are then used to manage the foreign exchange risk.

Funding distributed by instrument and currency shows that covered bonds are primarily issued in SEK, while unsecured bonds are largely in foreign currency (Diagram 24). Funding through short-term certificates occurs almost exclusively in foreign currency since the market for bank certificates in SEK is very small.

Swedish banks currently have good access to funding and their borrowing cost in primarily covered bonds in SEK, with an exception of a shorter period in conjunction with the Brexit referendum this past summer, has continued to fall during the year (Diagram 25). One underlying cause is that the Swedish banks are better capitalised and have higher profitability than their European competitors (see Banks' earnings and capital).

On 14 October 2016, a new money market reform entered into force in the USA and the US money market funds became subject to new rules. The regulatory framework affects primarily those funds that own securities issued by banks and aims to reduce the risks associated with these funds. The US money market funds that invest in banks have had major outflows during the year. Since the funds are an important actor on the market, this can lead to a decrease in the demand for short-term bank certificates in USD. It is too early to say how the reform affects the market, but the major Swedish banks are saying themselves that both volumes and prices have remained largely the same.

MATURITY TRANSFORMATION CREATES VULNERABILITY

The maturity of the banks' liabilities is generally shorter than the maturity of their assets. Savers with deposits on account may withdraw their money with little advance notice while borrowers may keep their loans over a longer time horizon. Maturity transformation is core to the banking system, but it is also a vulnerability since it means that the banks are exposing themselves to refinancing risks.

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 fairly regular basis, and savers would not be able to take out their money as easily to meet unforeseen expenses. Maturity transformation is therefore a key economic function.

Swedish banks are exposed to refinancing risks

In order to assess banks' liquidity risks, it is necessary to understand the maturity profiles of both their liabilities and their 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 largely fund themselves through foreign investors. By having investors from a wide range of geographies, the major banks have multiple alternative funding channels. This decreases the refinancing risk

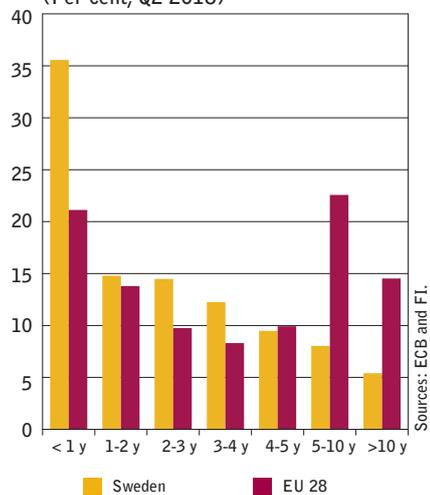
25. LOW COST FOR FINANCING MORTGAGES (Average credit margin for five-year covered bonds)



Note. Average asset swap spread for five-year covered bond benchmarks.

Source: Bloomberg.

26. SHORT MATURITIES ON SWEDISH BANKS' SECURITIES (Per cent, Q2 2016)



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

Sources: ECB and FI.

since they are not dependent on a few lenders or geographic markets. At the same time, however, foreign investors can be affected by shocks that are not closely linked to either 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 just under three years, which is relatively short in a European comparison (Diagram 26). At the same time, the actual maturity for many of the Swedish banks' assets is long, which poses a structural liquidity risk (Diagram 27).

The maturities for assets and liabilities match one another relatively well in the short- and mid-term, but there may be imbalances in the different maturity segments. A relatively large share of the liabilities does not have a contractual maturity (in the diagram designated Not defined). These liabilities consist primarily of deposits from the public that to a large extent are covered by the state deposit insurance and thus can be considered to be part of the banks' stable funding.

Liquidity reserves reduce short-term financing risks

FI considers Swedish banks' liquidity and refinancing risks to be one of the largest potential vulnerabilities in the financial system, although confidence in the Swedish banks is currently high and their access to funding continues to be strong.

Liquidity shortages can arise in several ways, but essentially are an imbalance between inflows and outflows that is greater than the bank can cover with new financing 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 if a bank experiences funding problems.

An important step in the work on reinforcing the banks' resilience to disruptions in their financing is the Liquidity Coverage Ratio (LCR) requirement. Sweden introduced a national LCR requirement already in 2013. 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 in EUR and USD and for all currencies combined. As presented in Diagram 28, the major Swedish banks meet the LCR requirements.

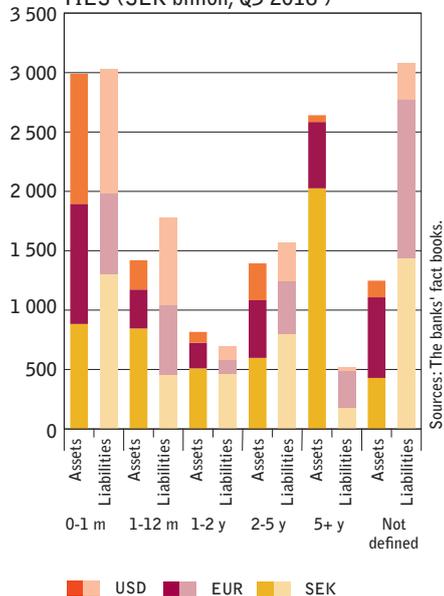
Stable funding limits funding risks in the long run

At a given maturity for a bank's assets, the degree of maturity transformation affects the size of the refinancing need a bank has within a certain time period. The higher the degree of maturity transformation, the more often the bank needs to renew its funding. This means that the bank's funding needs during a given period will be larger. This also increases the vulnerability that the bank will be subject to poorer funding conditions.

In order for the banks to better match the maturities between their assets and liabilities, the Basel Committee has prepared a measurement, the Net Stable Funding Ratio (NSFR).¹⁸ 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.

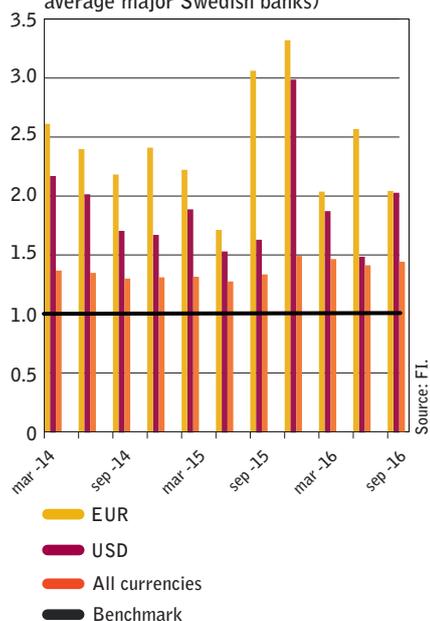
¹⁸ Basel III: the net stable funding ratio, October 2014, Bank for International Settlements. <http://www.bis.org/bcbs/publ/d295.htm>.

27. BANKS' ASSETS HAVE LONGER MATURITIES THAN THEIR LIABILITIES (SEK billion, Q3 2016)



Note. Compromise 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.

28. BANKS MEET LCR-REQUIREMENT (Quotient value, average major Swedish banks)



Note. LCR requirement as stated in FI's regulatory code (FFFS 2012:6).

The major Swedish banks are already relatively close to the planned requirement of 1.0 (Diagram 29).¹⁹ Because the major banks are currently below 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 structural liquidity risk. At the same time, it has been noted that NSFR has become a priority among the major banks. All of the major banks have strategies for meeting at least 100 per cent of the NSFR well in advance of its entry into force; the requirement will be introduced within the EU in 2018.

How much of the liquidity reserve is used in a stressed scenario?

LCR is a requirement on the banks to hold liquidity reserves for a stressed scenario. But what happens to the LCR ratio under stress? Are the reserves used up, is much of them left or do the banks still meet the requirements?

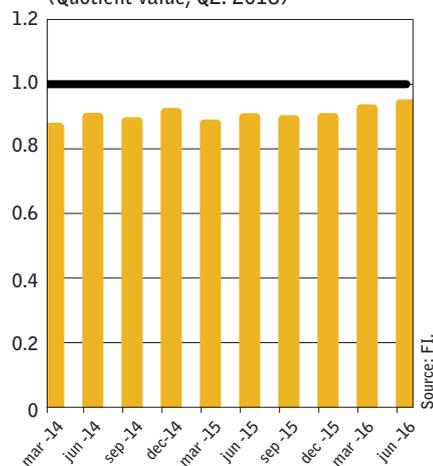
As part of its FSAP assessment of Sweden, the IMF conducted stress tests on the four major banks' liquidity risks based on LCR and NSFR, using both total currencies and individual currencies. For LCR, IMF started with a basic scenario from Finansinspektionen's calibration of LCR, and for NSFR, the basic scenario reflected the NSFR parameters according to Basel III. The aim was to assess the resilience of the banking sector to sudden, significant withdrawals of deposits by the public, higher cash outflows from market funding and unutilised customer loans and lower market valuations of the banks' liquid assets. The results indicate that the major Swedish banks could manage shorter periods without having access to market funding. They could also withstand more serious liquidity shocks on the market. In a more serious scenario with large shocks to the financial markets, the dependence of the major Swedish banks on deposits with operational relationships²⁰ constitute a higher risk, but despite this there are significant reserves left at all of the four major banks where the LCR ratio exceeds or is just under the requirement of 100 per cent, with the exception of one bank whose LCR ratios falls more.

The results of the stress tests for NSFR also show a relatively good resilience even if the major banks in the serious scenario are a bit below the requirement of 100 per cent. It is notable that the EBA in its legislative proposal sets the requirement that the NSFR on an ongoing basis must exceed 100 per cent. The EBA justifies this by arguing that NSFR is a structural liquidity measure and therefore less volatile, even during times of stress. In the IMF's stress test, the major banks' NSFR falls by 11–14 percentage points in a more stressed scenario.

19 The requirement on NSFR will be introduced within the EU first in 2018, but the Basel Committee decided on a definition of the measure already in October 2014. Based on the information on stable funding that the banks report to FI as part of COREP, FI has estimated the banks' NSFR based on the Basel Committee's definition. This estimate may vary from other published assessments.

20 Refers to deposits from the banks' non-financial customers, who are not household customers, where the customer's goal of the deposit is not only to receive interest. The deposit is instead a means for the customer to conduct an operational service, for example a salary account that is primarily used to make payments. This type of deposit is considered to be more changeable than household deposits in a situation where a stress affects liquidity.

29. BANKS NOT FAR FROM
PENDING NSFR-REQUIREMENT
(Quotient value, Q2. 2016)



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

Source: FI.

THE RIKSBANK'S LIQUIDITY ASSISTANCE AS A COMPLEMENT

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

The principle for liquidity assistance from the central bank in a crisis has long been to support solvent banks, lending freely against good collateral, on terms that mean this support is not used by banks under normal market conditions.

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 handle their own risks given both normal and stressed market conditions.

In the event of an extensive systemic shock, it is doubtful whether banks could use their liquidity reserves in the same way as when an individual bank suffers problems. There is a high probability that in such a scenario there will not be enough buyers on the market for the securities crisis-stricken banks need to sell from their liquidity reserves. The banks may even become, through their role as market makers, net buyers of bonds and become subject to a higher funding need.

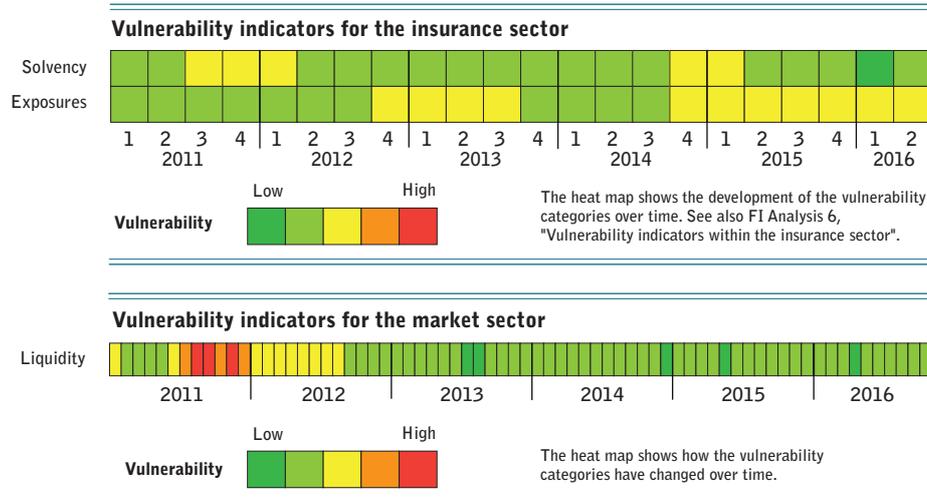
In such a situation, liquidity assistance from the Riksbank may be necessary to maintain financial stability. The Riksbank showed through its actions during the global financial crisis in 2008 that liquidity assistance measures can efficiently contribute to resolving such problems. High capital requirements (which mean that the banks continue to be solvent) and requirements on liquidity reserves in the form of assets that are eligible as collateral for loans at the Riksbank are therefore important for the efficient management of a liquidity crisis at the systemic level. The Riksbank can then take measures that generally improve liquidity, such as offering loans at longer maturities than normal and having better collateral when lending than in previous crises.

The Riksbank, thanks to its unique ability to create a means for payment, plays a central role in counteracting and handling threats against financial stability that derive from disruptions to the supply of liquidity. The Riksbank's ability to provide general liquidity support is not regulated in the Riksbank Act. The formulation of the Riksbank's assignment within the area of financial stability also does not provide sufficient guidance about where in the Riksbank's mandate the management of financial crises is located. It should be expressly stated in the Riksbank Act 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.²¹

²¹ See FI's consultation response to 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

The Swedish financial system is closely interconnected. The fact that the banks own each other's covered bonds is one of the many reasons why shocks can spread throughout the system. Liquidity in the systemically important fixed-income markets is currently satisfactory, but how this situation may change in an eventual crisis is difficult to predict. Insurance companies are well-capitalised and equipped to handle the stresses resulting from today's low interest rates. Good resilience also reduces the likelihood that insurance companies will enhance fluctuations in the equity and bond markets.



Along with the major banks, the systemically important securities markets are most important for maintaining 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, while poorly functioning markets instead enhance 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 funding 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 price sensitivity. Strong market liquidity means that firms find it easier to adapt their portfolios and reduce risks that they no longer want to carry. Weaker market liquidity means, under normal conditions, that it becomes more expensive for firms to conduct transactions. Weaker market liquidity under financial stress decreases the financial firms' management room and possibilities for obtaining funding and managing risks. Under extreme stress, market liquidity can disappear completely, which means that firms may have no access to funding or the possibility of managing their risks. In a worst-case scenario, this can threaten a firm's solvency.²²

²² Solvency is a measure of a firm's ability to make its payments.

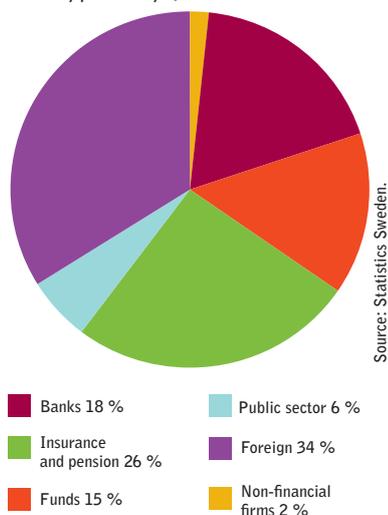
SYSTEMICALLY IMPORTANT FIXED-INCOME MARKETS FUNCTION WELL

The market for covered bonds links together important parts of the financial system and therefore plays a special role when it comes to financial stability. Covered bonds are the largest category in the banks' securitisation (see Banks' funding and liquidity risks) and the bonds are largely owned by other banks, insurance companies and funds (Diagram 30). Since the cover pool consists of mortgages, there is also a link to household indebtedness, although this cover pool provides considerable security for an investor. A bank would need to fail, its collateral would need to drop significantly in value and households would need to stop paying off their mortgages before investors would potentially lose their investment. As a result, the risks associated with owning a covered bond, even in a crisis scenario, are small.

The market for covered bonds is far from the only source of interconnectedness. In addition to being important investors in covered bonds, some insurance undertakings are also major partners in banks. The banks are closely connected through the inter-bank market, where they borrow from one another without collateral, and the repo market, where they borrow from one another and other parties with collateral. The interest rates in the inter-bank market, in turn, are used to set the STIBOR rate. This rate serves as the basis on which many derivative contracts are priced and thus serves as an additional channel through which a shock can spread in the financial system.

The most recent phase of EMIR (European Market Infrastructure Regulation) entered into force in June of this year. As a result, many OTC derivatives are now cleared through a central counterparty.²³ Ninety per cent of all OTC interest rate derivatives in SEK that are not listed on the stock exchange are cleared, which can be compared to the approximately 20 per cent that were cleared five years ago.²⁴ One purpose of clearing derivative instruments centrally is to move the counterparty risks out of the banking system and instead create an independent system to handle them. The greater number of cleared transactions leads to greater transparency, which means that market participants in a crisis situation find it easier to gain an overview of their exposures and risks. This, in turn, reduces the risk that the same problem that occurred during the financial crisis will re-occur, i.e. lack of trust in counterparties meant that liquidity in some markets disappeared. However, more clearing means a greater concentration of risk to the central counterparties, which requires that they have well-functioning risk management and sufficient capital.

30. COVERED BONDS BY OWNER
(Share, per cent, Q2 2016)



Note. All foreign entities are included under Foreign, whether non-financial firms, the public sector, insurance undertakings or other financial institutions.

²³ All firms that conduct clearing operations are not central counterparties and thus do not take on financial counterparty risks. One such example is Euro-clear, the system to handle the settlement of transactions on the equity and fixed-income market. The systemic risks that this type of system can create are mainly operational, for example extensive computer failure that would make it difficult to implement the purchase and sale of financial assets as intended, which (in addition to generating general market uncertainty) could create liquidity shocks. The financial counterparty risks, however, stop with the firms participating in the system and must be handled by these firms. There are often procedures for this type of system specifying how the effects of a failing participant should be managed to minimise losses. These procedures may be the requirements that must be met to participate, different forms of guarantees, credit lines, arrangements for securities loans, etc.

²⁴ Source: BIS, LCH, Nasdaq.

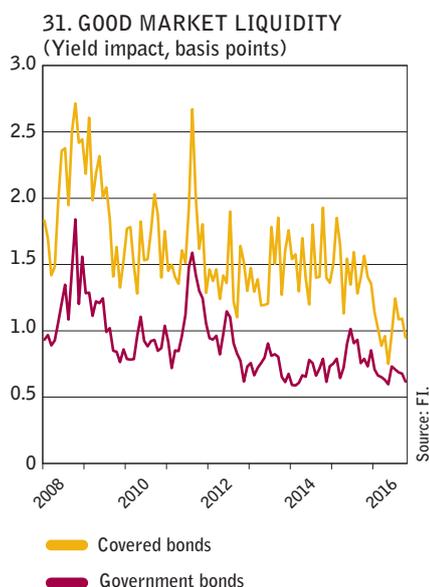
LIQUIDITY IS GOOD, BUT WHAT HAPPENS UNDER STRESS?

Market liquidity on the fixed-interest and foreign exchange markets is an important indicator of how well these markets are functioning. The foreign exchange markets as a rule are some of the more liquid markets, and FI makes the assessment that these markets are currently functioning well. When it comes to the fixed-income markets, there are several factors that indicate that liquidity is good at this point in time.

Diagram 31 shows what is called the “yield impact”. If the yield impact is low, this means that transaction costs are low, which improves market liquidity.²⁵ The currently low yield impact implies that market liquidity for covered bonds and treasury bonds is currently good. According to the EBA’s analysis of liquidity in a number of asset classes, covered bonds and treasury bonds are two of the most liquid assets. This also applies when under stress, or given similar circumstances as during the financial crisis in 2008–2009.²⁶

Another important factor in addition to transaction costs is the cost for banks to fund their operations. When this cost is low, it is cheaper for the banks’ market makers to fund their trading books, which also improves market liquidity. Today, the difference between the interest banks pay to the money markets and the risk-free rate is low, which indicates good liquidity.

However, even if market liquidity is currently good, it can change rapidly. Market liquidity usually deteriorates when a market is exposed to stress. Increased capital requirements and thus higher costs for the banks to keep trading books can weaken liquidity during stress in that the banks in their role as market makers are not prepared to trade in equally large posts.



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.

Swedish fund industry does well in IMF’s stress tests

Swedish funds have assets worth approximately SEK 3,200 billion that are invested in the financial markets via funds. The assets in these funds consist primarily of household savings, both in the form of private savings and collective occupational savings.²⁷ Funds therefore constitute an important channel for households to earn a return on their savings and are also central participants in the financial markets. Many funds offer investors the opportunity to sell their holdings with short notice. It is a security for investors, who can quickly get their money back if needed. It is also a stability risk if liquidity in the assets the fund will sell is limited. When many investors make large withdrawals at the same time, funds must sell large asset volumes to meet this withdrawal, which in the event of poor liquidity could create large price fluctuations on the markets.

However, it should be noted that stability problems in a fund management company or on the fund market are of a different character than the stability problems that may arise in a bank or insurance company, i.e. a firm which, unlike a fund management company, has the customers’ money on its own

²⁵ FI Analysis No 3 (2015), “Liquidity in the market for covered bonds”.

²⁶ EBA (2013), “Report on appropriate uniform definitions of extremely high quality liquid assets (extremely HQLA) and high quality liquid assets (HQLA) and on operational requirements for liquid assets under Article 509(3) and (5) CRR”.

²⁷ Statistics Sweden data, “shares in investment funds by type of fund and sector”.

balance sheet. Like a clearing firm that is not a counterparty, it is not the financial company's financial strength – or lack of strength – that is interesting, but rather how its handling of the operations in various situations can affect other participants.

In 2016 the IMF conducted a stress test of the Swedish fund industry. The test aimed to evaluate the fund industry and the market's ability to manage the asset sales that funds need to do to meet large withdrawals from investors. The stress tests determined that the markets were sufficiently liquid to handle even large sales of fund assets. Only the market for corporate bonds did not have sufficient liquidity to meet the assumed sales rush from funds due to large withdrawals.

Even if the stress test indicates that there is sufficient market liquidity for managing large sales of assets from the fund industry, the results should be interpreted with some caution. The scenario IMF investigated is limited to withdrawals that target funds. In a stressed situation, sales may be made by many investors and include more than just funds, which could introduce additional stresses for market liquidity.

LIFE INSURANCE COMPANIES HAVE NOT ACTED PROCYCLICALLY

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

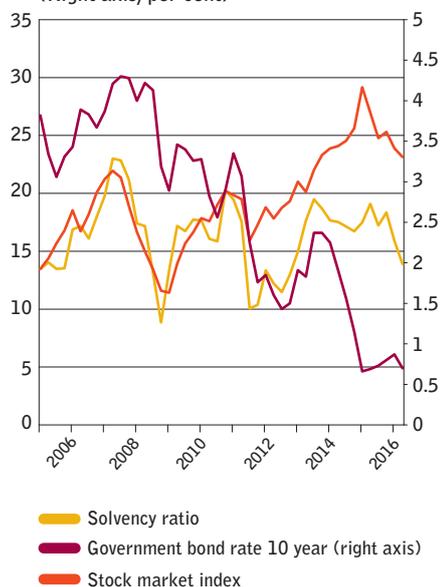
Life insurance companies have commitments in the form of future pensions. Assets consist primarily of shares and interest-bearing investments. The challenge for these firms is to manage assets and liabilities and to manage risks such that they are able to meet their guaranteed commitments. This management 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 that the company sells higher-risk assets like shares and purchases 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 wording of the regulation affects which measures the firms may take and when. In Sweden, there are currently different rules for occupational pension insurance and other life insurance. In both regulations, a market value-based approach is combined with a principle that the discount interest rate on long maturities converges toward a certain interest rate level in the long run. The idea behind this method is to counteract the procyclicality that is encouraged by a discount interest rate curve based solely on market prices, since market prices are procyclical on their own.

FI makes the assessment that the discount rate curve's design in the regulation for other life insurance (Solvency II) somewhat increases the risk of procyclical behaviour compared to the regulations for occupational pension insurance. The Solvency II regulation also entails a transition to more risk-sensitive capital requirements, which according to some can

32. THE LIFE INSURANCE COMPANIES HAVE NOT ACTED PRO-CYCLICALLY
(Right axis, per cent)



Note. The solvency ratio for life insurance companies which are still governed by the Solvency I regulation in relation to growth of a yield index for Swedish shares and the interest rate on a Swedish 10-year government bond.

Sources: FI och Thomson Reuters Eikon.

also increase the risk for procyclicality (see Do risk-based capital requirements lead to procyclicality?). To date, FI has not observed that the life insurance companies are acting procyclically (Diagram 32), but will continue to analyse the effects of Solvency II.

Do risk-based capital requirements lead to procyclicality?

New rules have been in force since 1 January 2016 on valuation, capital requirements and capital base for insurance undertakings that are subject to Solvency II. The Solvency II regulations consist of principles for marking-to-market assets and liabilities. The calculation of capital requirements aims to reflect the risks to which the undertakings are exposed. The Solvency II Directive was introduced into Swedish law through a Parliamentary decision on 18 November 2015. It was also decided at that time that occupational pension activities conducted by insurance undertakings would be subject to transition rules. This means that parts of the previous regulation (Solvency I) apply to these activities up until a new occupational pension regulation is drawn up and adopted. Occupational pension activities thus must continue to submit traffic-light reporting²⁸ to FI. The traffic-light reporting is used – unlike the capital requirements in Solvency II – as a supervisory tool to measure sensitivity to risk, and thus does not give FI the same opportunities for intervention.

The capital requirements in Solvency II are significantly more risk-sensitive than previous legislation. Risk-sensitive capital requirements create incentives for the undertakings not to take excessive risk. In theory, it also creates greater room for firms to manage capital losses during crisis situations, which enhances the firms' resilience.

However, some people also argue that risk-sensitive capital requirements increase the probability that financial firms behave procyclically during crises.²⁹ The reason for this is that risk-sensitive capital requirements may rise during a crisis period, at the same time as the undertakings' capital buffers shrink. The more risk-sensitive capital requirements thus become yet another factor, in addition to the shape of the discount rate curve, that can lead to procyclical behaviour. However, there are a number of mechanisms that have been introduced in the Solvency II regulation that aim to reduce the probability of procyclical behaviour and risks associated with financial stability.³⁰ It is therefore currently unclear if there is a procyclical effect and, if there is, how large it would be.

28 The traffic-light is a part of Finansinspektionen's method of supervising Swedish insurance undertakings. It measures how well the undertakings can handle the exposure to different financial risks and insurance risks. The traffic-light was introduced in 2006 and initially was supposed to be reported by all insurance undertakings. Since the start of the year only occupational pension undertakings are subject to the traffic-light reporting.

29 Repullo, Rafael, and Javier Suarez (2013), "The procyclical effects of bank capital regulation", *Review of Financial Studies* 26:2, 452–490.

30 The mechanisms include the LTG package (Long Term Guarantees) and transition rules for share price risk in the standard formula. These rules aim to reduce the risk of large portfolio changes due to short-term fluctuations in market prices and a specific date for the Solvency II regulation's implementation.

RISKS FOR PENSION SAVERS IN THE LONG RUN

In the long run, there is a risk that one or several life insurance companies will not be able to meet their commitments. The low interest rates are particularly challenging. The regulations for debt valuation are formed in part to prevent procyclicality, but have a downside in that there is a risk that pension liability will be undervalued in the presence of persistent low interest rates. The regulations also mean decreased opportunities to assess 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 in this case that the companies will not have sufficient assets for meeting the commitments.

During the year, FI has continued to monitor the insurance undertakings' resilience to low interest rates through stress tests (see Swedish insurance undertakings fare well in IMF's stress tests). FI continues to make the assessment that the insurance undertakings are equipped to manage the low interest rate level and thus meet their commitments.

Swedish insurance undertakings fare well in IMF's stress tests.

As part of its review of the Swedish financial sector (FSAP), IMF conducted a stress test of Swedish insurance undertakings. Four life insurance undertakings and three non-life insurance undertakings were included in the test, corresponding to a market coverage of 77 per cent and 53 per cent, respectively. The stress test included two macroeconomic shocks to market risks as well as shocks to insurance risks. The macroeconomic scenarios were supplemented by a number of independent sensitivity analyses and forecasts of future growth. The sensitivity analysis contained in part a scenario with a significant increase in the interest rate of Swedish covered bonds due to increased concern for credit risks and two scenarios with natural catastrophes based on a Northern European storm and a North American hurricane.

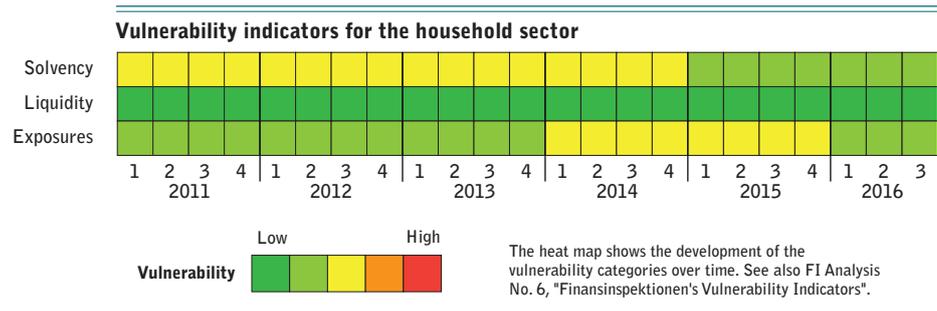
The Solvency II regulation was applied to the entire stress test, and even to the life insurance undertakings that apply the transition rules to their occupational pension activities. The aim was to get a risk-based result that could also be compared between the undertakings.

The results showed that prior to the stress, all undertakings meet the capital requirements that would be placed on them when applying the Solvency II regulations in full. After the stress was applied, two undertakings had a limited capital deficit. The outcome shows that, in general, Swedish insurance undertakings are financially strong and can handle financial shocks. They are also resilient to insurance risks, which means that if these risks are realised by an individual firm, there is no direct threat to specific insurance undertakings or financial stability.

However, the undertakings are facing significant future challenges when it comes to the low interest rates and reinvestment risks. For example, given this background, IMF recommends that FI conduct more stress tests based on the Swedish insurance undertakings' specific risk profiles. Five Swedish life insurance undertakings also participated in a stress test conducted by the European Insurance and Occupational Pensions Authority (EIOPA). The results will be announced in December.

Indebtedness and the Swedish economy

Household debt has growth considerably faster than both household disposable income and GDP for a long period of time. A greater share of new mortgage holders also has a high debt-to-income ratio. The level of household indebtedness continues to be a significant vulnerability, primarily for the macroeconomic development. In June, FI implemented an amortisation requirement on new mortgages, which appears to have slowed the growth of house prices and household indebtedness, but additional measures may be needed to reduce associated risks.

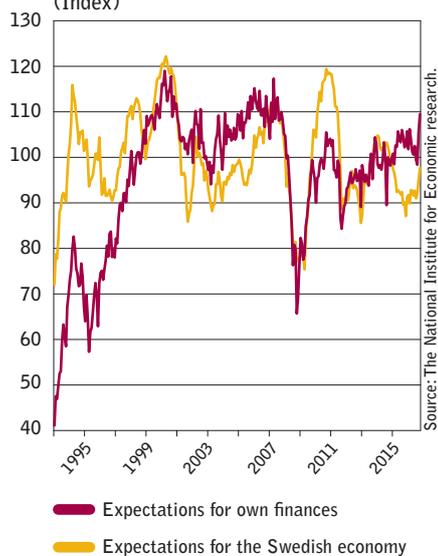


Loans provide firms and households with the opportunity to invest and consume without requiring them to save the needed funds in advance. The ability to borrow contributes to a more efficient use of savings and smoother household consumption over time. The ability of households and corporations to take on debt is thus positive for the economy. However, high indebtedness also gives rise to risks for lenders, borrowers and the economy at large. If imbalances accrue, the economy becomes more sensitive to shocks.

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 could further enhance an upswing in the 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 they can handle in the long run, that the value of assets is too high and that lenders are too willing to grant loans.

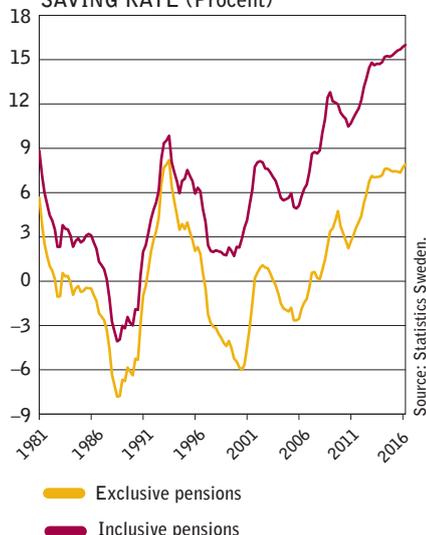
If households and firms take on too much debt during good times, there is a risk that they will no longer be able to pay their loans when the economy weakens. In a worst-case scenario this could lead to losses in the financial system that are so large they threaten financial stability. When the financial system is not fully functional, the credit supply is impacted negatively. This decreases the possibilities of households and firms to consume and invest, which amplifies 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 arise.

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



Note. Household expectations for their own finances and the Swedish economy. (<90=much weaker than normal, 90-100=weaker than normal, 100-110=stronger than normal and >110=much stronger than normal).

34. HOUSEHOLDS HAVE HIGH SAVING RATE (Procent)



Note. Savings as share of disposable income. Refers to four-quarter moving average.

35. CONSUMPTION LEVEL OF DURABLE GOODS NOT HIGH (Per cent)



Note. Consumption level of durable goods as percentage of disposable income. The consumption is seasonally adjusted and the disposable income is calculated as four quarters' moving average.

HOUSEHOLDS SAVE MORE

Households' finances continue to improve due to good economic growth, lower unemployment, favourable developments in real wages and very low interest rates. These favourable conditions are reflected in households' expectations for their own future economic conditions, which is at an all-time high since the financial crisis (Diagram 33). Households' view of the Swedish economy is more conservative, but has improved during 2016.

If households were to think in the short-term today and consume their entire income, they would need to decrease consumption in order to be able to manage higher interest rates or weaker income growth in the future. Despite their optimistic expectations, households appear to take relatively cautious decisions. For example, aggregate household savings are high, which means that households in general have relatively strong margins in their cash flows (Diagram 34). Households' consumption of durable goods, which can be expected to increase when households are optimistic and can be assumed to be more evenly distributed than savings across households, paints a similar picture. 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 35).

One important factor that affects households' finances is the current low level of interest rates. Swedish households are currently paying historically low interest rates on their mortgages, and almost 75 per cent of household mortgages have a fixed-interest term of less than one year (Diagram 36). Changes to the interest rate therefore will have a quick impact on households' finances. The percentage of loans with short fixed-interest terms has increased in recent years and tends to increase when the variable mortgage rate falls and decrease when the interest rates rise. If many households take the low interest rate for granted, they may be forced to make extensive adjustments when the interest rate rises.

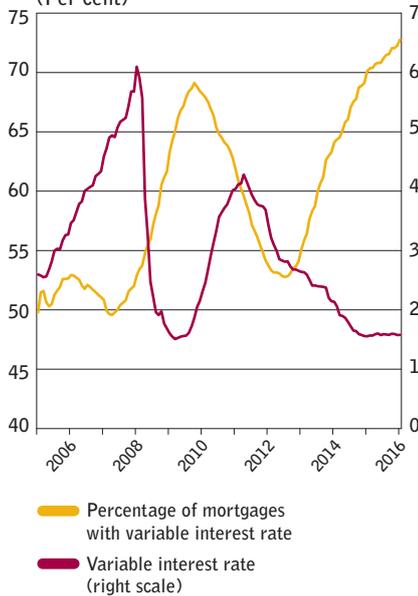
Households' expectations of the future level of the interest rate have fallen as the interest rates have fallen themselves, but not as much as the variable mortgage rates have fallen. In five years' time, households expect a variable mortgage rate of around 3.5 per cent (Diagram 37). This is slightly lower than the implicit mortgage rate from NIER's forecast for the repo rate.³¹ In the shorter term, households' expectations are instead slightly above what can be considered to be in line with NIER's forecast for the repo rate.

PRICE INCREASES HAVE SLOWED – BUT DEBTS ARE RISING

Household debt consists primarily of mortgages. Therefore, the rate at which house prices increase greatly affects the rate at which household debt increases and how many residential properties are sold. Swedish house prices have risen significantly faster than household income for a long period of time. This growth reflects the high demand for housing, primarily in metropolitan areas where there is high population growth and a large shortage of housing. In particular, there is limited access to rental apartments, at the same time as the tax system contributes to poor matching on the housing market. Low interest rates and the design of the

31 Implicit mortgage rate refers to the repo rate plus 1.5 percentage points, which corresponds to the average historical difference between the interest rates since 1996.

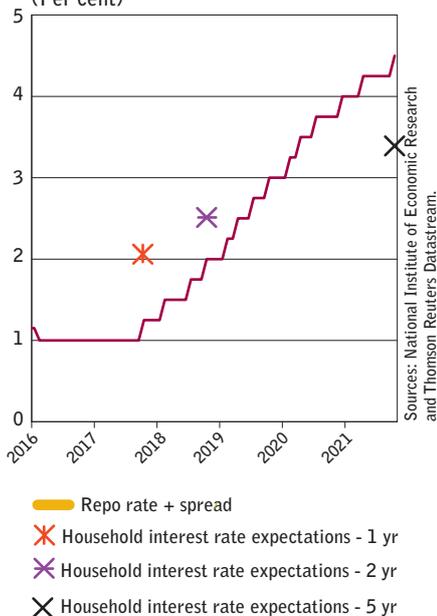
36. MANY HOUSEHOLDS HAVE VARIABLE INTEREST RATES (Per cent)



Source: Statistics Sweden.

Note. Percentage of mortgages with variable interest rate refers to the volume of mortgages with an original interest period of less than one year. Variable interest rate is shown as the average 3-month mortgage rate.

37. HOUSEHOLD EXPECTATIONS REGARDING THE INTEREST RATE (Per cent)



Sources: National Institute of Economic Research and Thomson Reuters Datastream.

Note. The diagram shows household expectations regarding variable interest rates for their mortgages for different time horizons, and NIER's forecast of the repo rate plus a spread of 1.5 percentage points.

tax system are also reducing costs for loan-financed housing purchases, which increases affordability.

During the beginning of 2016, however, house prices slowed considerably (Diagram 41). This is probably related to the introduction of FI's amortisation requirement on 1 June this year (see What effects has the amortisation requirement had?). However, after the summer prices began to rise rapidly again, primarily in areas outside of Stockholm.

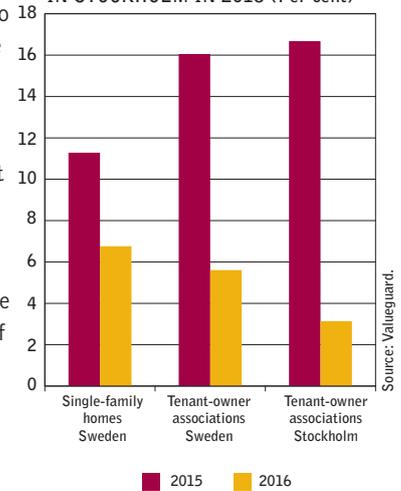
What effects has the amortisation requirement had?

On 1 June 2016, FI introduced an amortisation requirement for new mortgages. The amortisation requirement means that households that sign for a new mortgage with a loan-to-value ratio greater than 70 per cent must amortise on an annual basis 2 per cent of the total size of the mortgage. For loan-to-value ratios between 50 and 70 per cent, the annual amortisation is at least one per cent. The major banks began to apply the amortisation requirement at the beginning of 2016 and even households may have adapted before the requirement entered into force. Some of the effect may therefore have already been realised before it was introduced. This makes it difficult to evaluate how large the effects of the actual implementation were. This box contains FI's first assessment of how the requirement affected house prices and indebtedness.

The amortisation requirement affects household indebtedness in primarily two ways. First, greater amortisation means that households decrease their debt faster, which means that their balance sheets also shrink. Second, the requirement reduces households' demand for housing, which slows the rate at which house prices grow and thus the need for households to borrow. Since the amortisation requirement only includes new mortgages, only a small percentage of all households will be initially affected. It will take time before the requirement has a full effect on households' total debt. However, many of the households buying a new home have a loan-to-value ratio above 50 per cent and therefore are subject to the requirement. The amortisation requirement should therefore have a more immediate effect on prices on the housing market than on households' total debt.

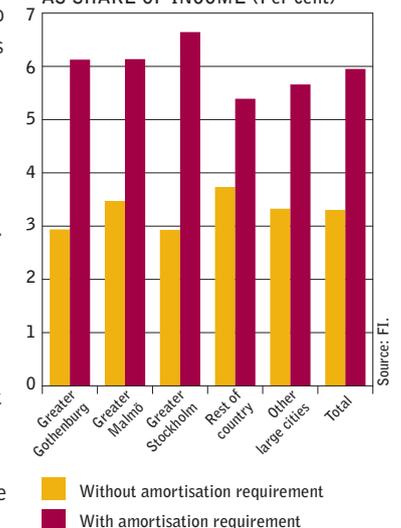
Since the amortisation requirement entails higher expenses for some households, this can also lead to lower consumption. Currently, however, very few households are affected by the requirement, so this effect so far is negligible.

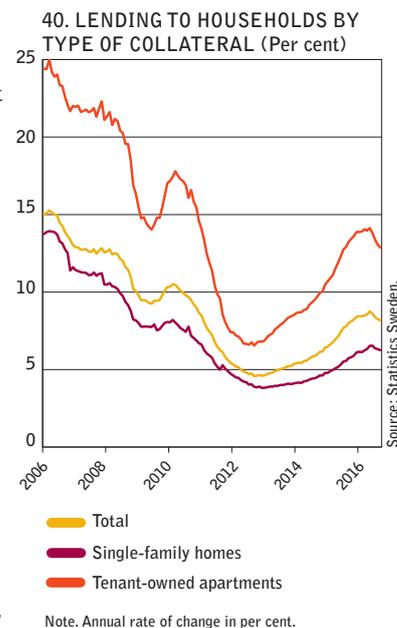
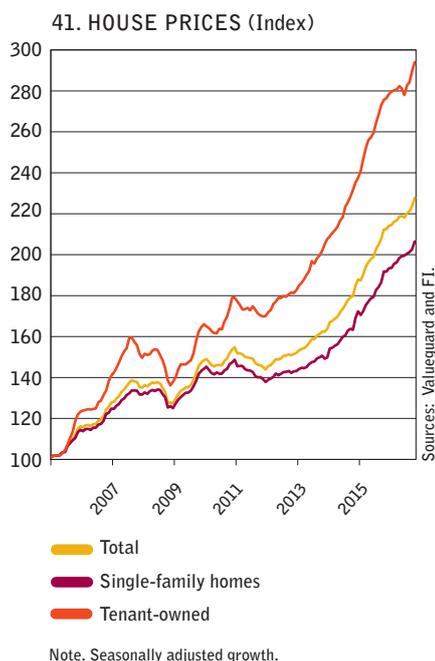
38. LOWER HOUSING PRICE GROWTH IN STOCKHOLM IN 2016 (Per cent)



Note. Price growth January - October 2016.

39. AMORTISATION AS SHARE OF INCOME (Per cent)





The slow-down in house prices in 2016 has occurred at the same time as the amortisation requirement was implemented. This has also been most obvious in the Stockholm area, where prices clearly rose at a slower rate than before (Diagram 38). This is in line with FI's expectations since the requirement in advance was considered to have a largest impact on the finances of households in Stockholm (Diagram 39). Due to Stockholm's high house prices, the amount that households borrow in relation to their income is higher in Stockholm. Therefore, the amortisation amounts in relation to income are also higher as a result of the requirement.

The number of concluded housing transactions decreased during 2016, primarily for tenant-owned apartments.³² This could be because fewer households have been able to sell their home at the desired price and thus have decided not to sell. A lower supply could have limited the slow-down in the growth of house prices. If these homes at some future point in time once again come out on the market and are sold at lower price levels, the fall in house prices will be visible first then. In other words, it can take some time before the full effects of the amortisation requirement are visible on house prices.

Household debt is growing at a slightly slower rate than in May. This slow-down has been stronger for tenant-owned apartments than for single-family homes, which probably is linked to that both house prices for and sales of tenant-owned apartments slowed more than for single-family homes (Diagram 40). The amortisation requirement therefore appears to have had somewhat of a dampening effect even on the growth of household debt, but the effect on debt is not as clear as the effect on house prices.

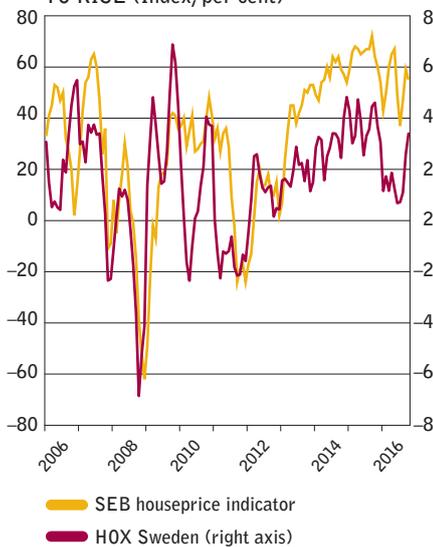
Elevated risk of a fall in house prices

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 is higher than normal. 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 decreases. One 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 fall 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 fall in house prices could be. The scope of an eventual correction will primarily be dependent on how large the shock is. Factors that indicate that a potential fall in house

³² Statistics Sweden Mäklarstatistik.

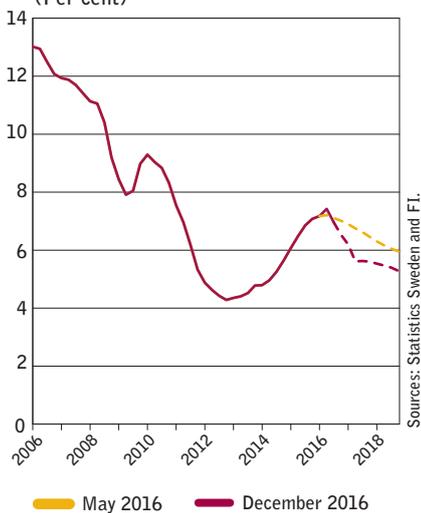
42. MANY HOUSEHOLDS BELIEVE HOUSE PRICES WILL CONTINUE TO RISE (Index, per cent)



Sources: SEB and Valueguard.

Note. The house price indicator shows the net number of households that believe house prices will rise or fall. HOX Sverige displays quarterly rate of change in prices as a per cent, seasonally adjusted.

43. HOUSEHOLD DEBT IS EXPECTED TO INCREASE AT SLOWER PACE (Per cent)



Sources: Statistics Sweden and FI.

Note. Lending growth to households, annual change in per cent. Seasonally adjusted data.

prices would not be very dramatic include that it is not common in Sweden to make speculative purchases of residential properties and that there is a shortage of housing that is propping up demand.³³ 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 42). If house prices begin to fall, prices may fall dramatically. 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, since household savings can act as a buffer. If a sharp fall in house prices were to occur in conjunction with other shocks to the economy, this could lead to a downward spiral that subsequently could result in a deep recession. In such a scenario both the value of households' homes and their financial assets, which largely consist of shares and bonds, would fall.

Debt increases rapidly despite slow-down in growth of house prices

With the exception of a short period around 2010, household debt has been growing faster than income for a long time. This is not sustainable in the long run and may result in the build-up of vulnerabilities. The slow-down in house prices in 2016 has meant that debt growth is lower, but lending to households still increased by 7.5 per cent a year. FI has revised downward its forecast for household debt (Diagram 43). This is due in part to the lower growth in house prices, but also because of a more negative view of future macroeconomic growth.

Unless house prices take off again it is reasonable to assume that debts will continue to grow at slower rate, but it may take time before the increase in household debt slows. This is because house prices are at a significantly higher level than they were a few years ago, which means that people who move may need to borrow more to finance their new home. A slow-down in the growth of house prices therefore has a delayed effect on the growth of debt.

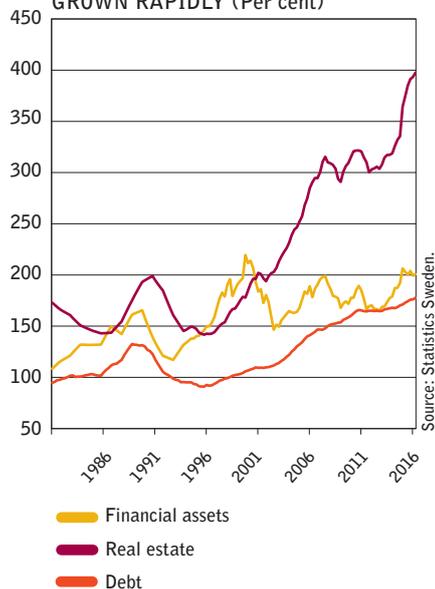
MORE HIGHLY INDEBTED HOUSEHOLDS CONSTITUTE A GREATER RISK

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.

A household's cash flows provide an overview of its income and expenses. The higher a household's debt 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, 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.

33 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.

44. BOTH ASSETS AND DEBTS HAVE GROWN RAPIDLY (Per cent)



Note. The sharp increase in the residential assets at the end of 2014 is largely due to changes in definitions.

Two normal ways to monitor the vulnerabilities linked to household indebtedness are to monitor the loan-to-value ratio and the debt-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 debt-to-income ratio instead shows a household's debt 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 debt-to-income ratios.³⁴ High indebtedness can therefore introduce a risk for 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. Measures such as the mortgage cap and the amortisation requirement help reduce these risks by reducing the percentage of highly indebted households and decreasing the size of the households' balance sheets.

Households have large balance sheets

At the same time as household debt has grown, so have household assets, both due to increases in value and a high level of savings (Diagram 44). Households are holding assets that are approximately three times as large as their debts. At an aggregate level, 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.³⁵

On the whole, FI makes the assessment that Swedish households in general have a good financial position. They have sufficient assets such that there is a limited risk that many households will suffer negative net wealth as a result of a fall in asset prices. However, many studies show that highly indebted households appear to decrease their consumption regardless of the size of their net wealth.³⁶ This may be because the households' savings are largely in shares and bonds, which often fall in value when house prices fall. 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.

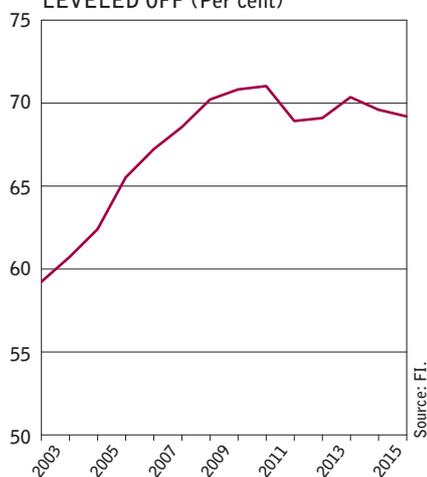
Most households need to take on loans to finance a purchase of their

³⁴ See, for example, Andersen et al (2014), Household debt and consumption during the financial crisis: Evidence from Danish micro data, Danmarks Nationalbank Working Paper, March 2014 and Bunn & Rostrom (2014), Household debt and spending, Bank of England Quarterly Bulletin 2014 Q3

³⁵ See e.g. Household Debt and Monetary Policy: Revealing the Cash-Flow Channel, November 2016, Flodén et al, Swedish House of Finance Research Paper No. 16-8. "Highly indebted" refers to the one-third of households that have the highest debts in relation to their disposable income.

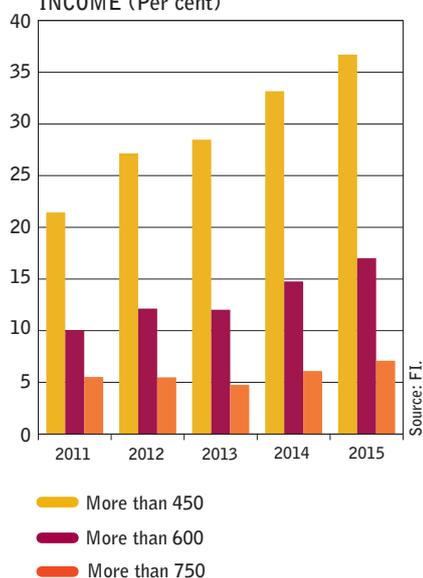
³⁶ See e.g. Household debt and consumption during the financial crisis: Evidence from Danish micro data, Working Paper, March 2014, Andersen et al, Danmarks Nationalbank and Is a Household Debt Overhang Holding Back Consumption?, August 2012, Dynan.

45. LOAN-TO-VALUE RATIO HAS
LEVELED OFF (Per cent)



Note. Loan-to-value ratio as percentage of the market value of the residential property.

46. MORE HOUSEHOLDS TAKING
LARGER LOANS RELATIVE TO
INCOME (Per cent)



Note. Loans as a percentage of disposable income.

home, and 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 important to follow how much households borrow in relation to the value of their homes 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 45). Since FI introduced the mortgage cap in 2010, loan-to-value ratios have stabilised and even decreased slightly. However, 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, this 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 debt-to-income ratio for households has increased (Diagram 44). Over the past 20 years it has almost doubled and today is almost 180 per cent. The aggregate debt-to-income ratio shows total household debt in relation to total household disposable income. It is a blunt measure of the vulnerability of households to shocks, since the measure is also affected by different structural factors that are not directly related to household vulnerability. For example, the share of households that own their homes has increased, which has contributed to the increase in the aggregate debt-to-income ratio.³⁷ 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, particularly if the alternative would be a highly leveraged commercial property owners.

Looking solely at households that have been granted new mortgages, indebtedness has increased significantly there as well. The average debt-to-income ratio for households with new mortgages has increased clearly over the past few years and is now more than 400 per cent, and an increasing number of households are reaching high levels of indebtedness (Diagram 46). Despite that households on average borrow more in relation to their income and more households have high debt-to-income ratios, FI's stress tests of new borrowers show that most households have sufficient margins to handle significant increases in interest rates or the loss of income due to unemployment.³⁸ The risk that households would not make their loan payments and that the banks would suffer losses on their lending appears to be small, which is also illustrated by the risk indicators that were shown in the beginning of this section. 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 disruptions, which could have significant consequences for the economy. Even if household indebtedness is not primarily judged to constitute a risk for financial stability, it does introduce a risk of a negative macroeconomic development. In the long run, a strong economic recession could also mean that firms

37 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.

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

have problems paying their debts, which could lead to a rise in credit losses for the banks.

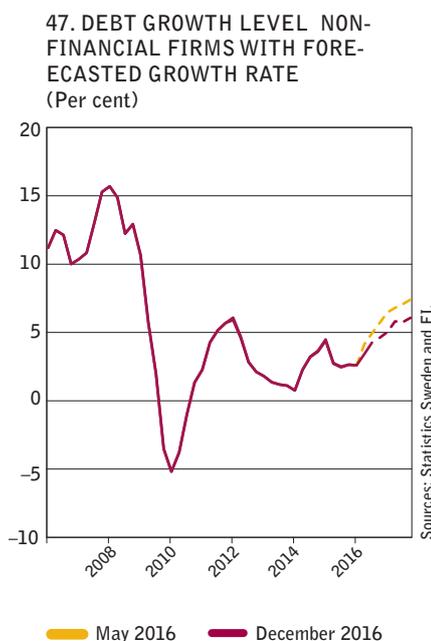
Measures to manage the risks of household indebtedness

In general households are considered to have good margins for managing their debts and they do not appear to be making decisions that are 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 a new upswing in house prices 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 vulnerability and the height of the fall in the Swedish economy if and when it turns. Additional measures may therefore be needed in such a situation, but these measures need to be carefully calibrated to ensure that they do not trigger the very problems they aim to prevent.

FI has already taken a number of measures to reduce the risks associated with household indebtedness. 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 also introduced 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 associated with household indebtedness aim to create buffers and ensure that households are resilient to different types of shocks. Both the mortgage cap and the amortisation requirement primarily affect households' balance sheets. Any additional measures should therefore probably primarily target households' cash flow risks. One such example is a debt-to-income limit, i.e. a cap on how much a household may borrow in relation to its disposable income, which FI has analysed.³⁹ FI does not currently have a sufficiently clear mandate to implement a debt-to-income limit. It is therefore very positive that a political framework agreement was reached on 26 October of this year that will allow clarify FI's authorisation and make it possible to take additional measures if necessary.

In addition to the day-to-day work supervising the banks' credit assessment processes, the following measures to prevent risks associated with household indebtedness 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 raised the risk weight floor for mortgages in two stages in 2013 and 2014, respectively, from around 5 to 25 per cent.
- To strengthen the banks, new capital requirements were implemented in accordance with new EU regulations.⁴⁰ The requirements aim

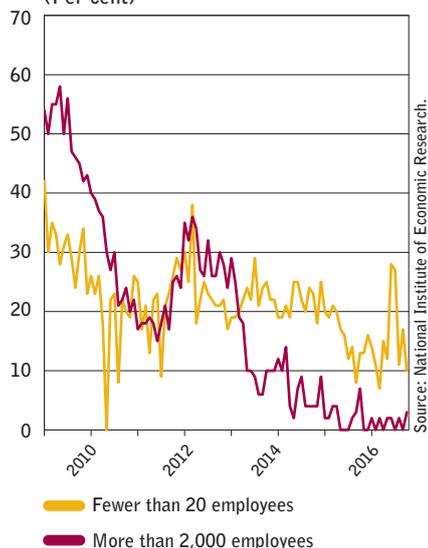


Note. Growth in lending to corporates, annual change in per cent.

³⁹ See FI Analysis No. 5 (2016), "Macroeconomic effects of debt-to-income limits".

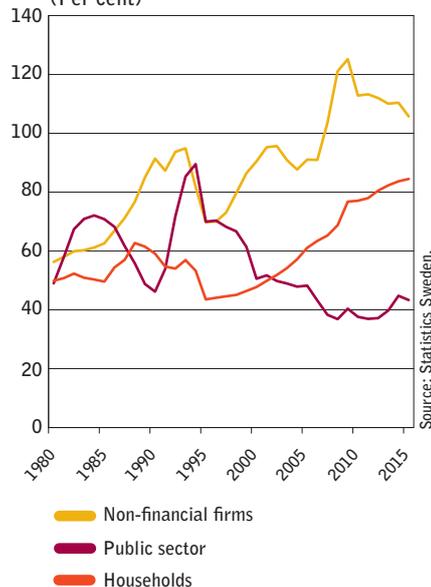
⁴⁰ Capital requirements for Swedish banks, May 2014, FI Memorandum (Ref. 14-6258). http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2014/kapital_ny3.pdf.

48. FINANCING CONDITIONS FOR DIFFERENT TYPES OF FIRMS (Per cent)



Note. Percentage of firms that stated it is harder, or significantly harder, than normal to finance their operations.

49. DEBT AS PERCENTAGE OF GDP (Per cent)



Note. Consolidated debts as percentage of GDP.

to increase the banks' resilience in the event of a crisis.

- A decision was made in September 2014 to set the countercyclical buffer rate at 1 per cent as of September 2015. On 22 June 2015 FI decided that the countercyclical capital buffer would be raised to 1.5 per cent 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 worked to promote offering customers individually tailored amortisation plans in conjunction with mortgages as of 2014.
- During the spring of 2016, FI met with the heads of the eight largest banks and emphasised the importance of limiting the growth of debt-to-income ratios.
- FI implemented an amortisation requirement as of 1 June 2016.

FI's measures to manage household indebtedness could prevent risks from building up, but they cannot resolve the fundamental problems on the housing market. In order to prevent rapidly rising house prices and debt from leading to major imbalances, measures are also needed in other policy areas.

CORPORATE DEBT

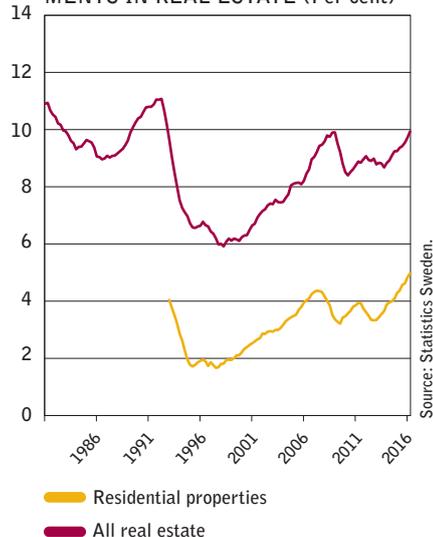
Non-financial firms finance their operations with equity and borrowed capital. Equity consists primarily of share capital and undistributed gains, while borrowed capital includes loans from credit institutions and market borrowing via bonds and commercial paper. The choice of financing is affected by 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 disruptions arise, the firms' investments and other activities may decline and economic activities may therefore deteriorate. There is a simultaneous risk that indebtedness in the corporate sector will cause losses for the banks and other investors who have lent money to firms in the event the firms ultimately experience problems repaying their debts. Firms' loans are strongly affected by the state of the economy and therefore increase in general at a more irregular rate than those of households. At present, corporate loans from Swedish banks are increasing by around 5 per cent a year (Diagram 47).⁴¹ This means that corporate debt is now growing slightly faster than GDP, which can be explained by the strong economy and low interest rates. FI is predicting that corporate debt will increase somewhat faster in the future.

In general, small and mid-sized firms find it more difficult to secure funding than large firms, which probably both reflects that the banks view them as more risky and that they do not have access to capital market funding (Diagram 48). Taking into consideration the size of the Swedish economy, corporate debt has decreased since 2009 (Diagram 49). This is largely due to a decrease in intra-group loans as a result of regulatory

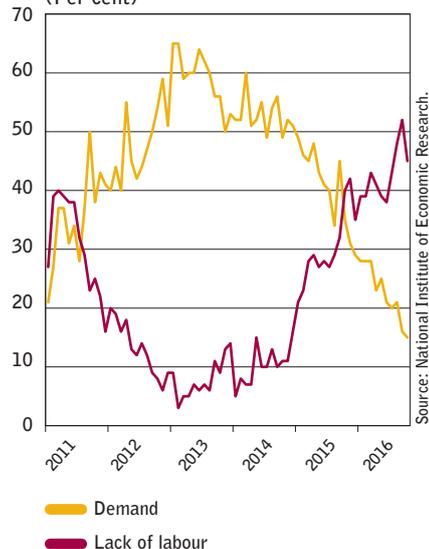
41 Refers to seasonally adjusted growth.

50. GROWTH RATE FOR INVESTMENTS IN REAL ESTATE (Per cent)



Note. Investments in residential properties and real estate as a percentage of GDP.

51. UTILISATION OF RESOURCES IN CONSTRUCTION SECTOR (Per cent)



Note. Percentage of respondents that stated each cause as the main obstacle to increased production.

changes that reduced opportunities to claim interest rate deductions for internal loans.⁴²

Housing investments continue to increase

A high percentage of banks' lending to non-financial firms goes to property-managing firms and the construction sector (Diagram 8 in Banks' earnings and capital). The commercial real estate sector in general has relatively large debts compared to other sectors. The prices on the commercial real estate market have also risen, which means higher indebtedness when acquiring properties. Real estate investments have also increased, primarily in residential property (Diagram 50).

Imbalances in the real estate sector have historically been a common cause of financial crises. However, despite the sharp increase in the construction of residential properties in recent years, the additional supply is not meeting the increase in demand, and most municipalities are experiencing a housing shortage. FI makes the assessment that the high rate of housing construction is currently needed, but it is also important to be alert during periods of high real estate investment, and FI will therefore monitor the changes carefully.

A greater supply of homes could counteract the risks associated with rising house prices and household indebtedness, even if this probably means that indebtedness as a whole increases. With the current rate of production, capacity utilisation in the construction sector is high. This means that it may be difficult to raise the rate of construction beyond its current point (Diagram 51).

The commercial real estate sector currently has good profitability and low financing costs, high demand and low vacancy rates. Given the low interest rates and the high investment rate, however, there is a risk that the number of poor investments will increase. Notably higher interest rates would worsen the conditions for the commercial real estate sector. Higher financing costs and rising vacancy rates could put pressure on profitability, which in turn could lead to a drop in the market value of real estate.

⁴² Tax planning may have contributed to high indebtedness among Swedish companies, Economic Commentary No. 3, June 2012, Blomberg et al., Sveriges Riksbank.



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