



**FINANSINSPEKTIONEN**

# Stability in the financial system

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**12 JUNE 2014**





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## Foreword

In the stability report, Finansinspektionen (FI) describes its opinion of stability in the financial system and any financial imbalances in the Swedish economy. We present our view of the major risks, which measures have been taken to reduce such risks, and what might need to be done ahead.

A stable financial system is necessary for the fundamental financial functions of saving, loans, payments and insurance. Working to promote a stable financial system is a broad task that is ultimately about avoiding financial crises and the negative effects they have on our economy.

In the autumn of 2013, the Government proposed that FI should bear the main responsibility for a number of new tools in the capital adequacy regulations, and what is known as financial stabilisation policy. This broadened responsibility for stability entails FI not only safeguarding stability in the financial system, but also taking measures to counteract financial imbalances among households and corporations with a view to stabilising the credit market.

Stockholm, 12 June 2014



Martin Andersson

Director General

## Summary

Sweden has a large and interlinked financial system that is dominated by four major banks. Several measures have been taken in recent years to strengthen its stability, and Finansinspektionen (FI) finds that resilience in the financial system is currently satisfactory. At the same time, the banks' dependence on market funding makes them vulnerable to a weakening of market confidence. FI has therefore continued its work to create buffers in the Swedish banking system. Capital requirements shall be particularly high for the major banks, because problems in these systemically important firms could have very serious implications for the economy. FI also sees risks associated with household debt continuing to rise from an already elevated level. At the same time, the financial position of households is essentially strong, and any further measures should be taken gradually so as to avoid causing an adaptation process that is too fast and hence costly.



In the last six months, the development of financial markets has been relatively calm, and risk premiums for governments and corporations have fallen (see diagram). However, the declining risk premiums are not only driven by improved economic outlook, but have also seemingly been driven by investors' search for yield due to low interest rates.

The recovery of the global economy continues. However, the progress is fragile, and low inflation in the euro area, combined with the fact that risk premiums can quickly rise again, makes the economy sensitive to shocks. Where Sweden is concerned, weaker growth abroad in combination with heightened financial unease could have a substantial impact on the economy and financial stability.

The financial crisis of 2008 clearly showed the cost of a poorly functioning financial system to the economy and public finances. Although a number of both global and national measures have been taken since then, work remains to be done to further reduce the risk of new crises, and the damage they can cause.

In FI's opinion, resilience in the Swedish financial system is currently sound, but risks are present, mainly due to a large banking sector that is sensitive to shocks, and the high indebtedness of Swedish households. It is particularly important to build up resilience to such risks because the Swedish financial sector and the economy are also much affected by problems outside of Sweden, for example due to dependence on foreign market funding. FI has a clear task in ensuring that the banks have sufficient buffers, sustainable funding strategies and sound risk management. The capital and liquidity buffers of Swedish banks have been strengthened in recent years. Several measures have also been taken to reduce the risks in household indebtedness, partly by further strengthening the resilience of the banks, and partly by the creation of buffers among households. It is important that risks and financial imbalances are not built up in the financial sector that can spread to the economy at large. FI carefully monitors developments ahead to determine if more measures are required. A key principle is that measures should be taken step by step so as to avoid undesirable consequences.

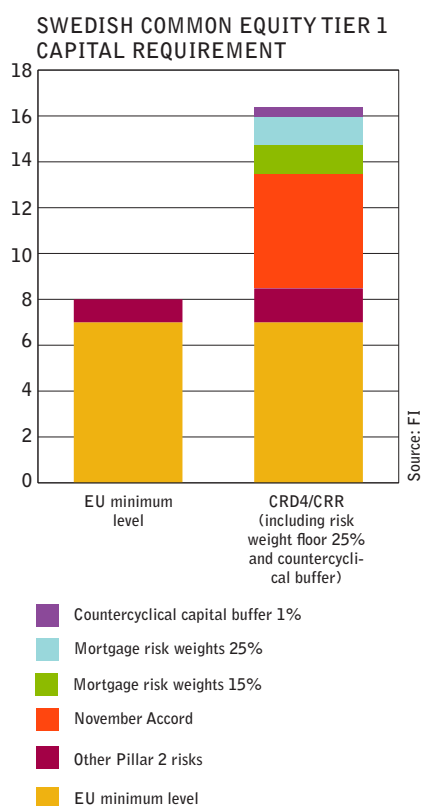
## A LARGE AND INTERLINKED SYSTEM

Sweden's financial system is large in relation to its GDP and concentrated around a handful of large, highly interlinked participants. The interlinkage partly comes from direct exposures, and partly from more indirect channels linked to the major banks having similar business models. Interlinkage is necessary in all financial systems. However, in stressed conditions, it might entail problems in one firm quickly spreading to other participants and markets. Insurance and fund management companies have an important part to play in the financial market, because they account for an important part of the funding of the banking system. In FI's opinion, however, no individual insurance undertaking can be considered systemically important.

Disruptions in the financial system can also spread through other channels in the financial markets. In order to manage the risks on the derivatives market, new regulations have given central counterparties (CCP) a greater role than before. Risks are hence concentrated to these CCPs, which creates a need to strengthen supervision of their capital buffers and risk management. This applies to both the Swedish CCP Nasdaq OMX Clearing AB and the international CCPs that are important to the Swedish financial sector.

## BUFFERS ARE CREATED IN THE BANKING SYSTEM

In recent years, a priority for FI has been to substantially strengthen the capital buffers of the Swedish banking system. The capitalisation of Swedish banks is currently satisfactory, and earnings remain healthy. At the same time, because of the size, concentration and interlinkage of the Swedish banking system, problems in this sector can pose a threat to the entire economy. FI therefore finds that having higher capital requirements for the Swedish banking system than in other EU member states is justified. This applies to both the system as a whole and specifically to systemically important banks. On 8 May 2014, FI presented its view of how the new capital requirements for Swedish banks are to be devised to ensure sustained healthy capitalisation. According to the information provided by FI, the common equity Tier 1 capital requirement for the major Swedish banks will be more than double the minimum requirement stipulated by the EU (see diagram). Also, the requirements are being introduced faster than is required by the EU.



The fact that household indebtedness has increased from an already high level entails that the countercyclical capital buffer needs to be activated at the level of 1 per cent. On the whole, it is believed that the requirements entail that the banks, compared with the minimum requirements, need to hold SEK 230 billion more in capital – a factor that the banks have already allowed for. This makes the Swedish financial system much more robust and resilient. FI is also currently conducting, alongside other EU member states, a particularly comprehensive study of the banks' asset quality and will participate in the stress tests performed by the European Banking Authority (EBA) in the autumn.

Sound capital buffers are also crucial to reducing the risks associated with the banks' dependence on market funding, but need to be supplemented with specific rules in the liquidity area. In a short-term perspective, liquidity risks for the major Swedish banks have decreased in recent years. This is largely because FI introduced a quantitative requirement for liquidity buffers on 1 January 2013. In FI's opinion, it is particularly

important that there are buffers in significant foreign currencies such as EUR and USD, which is also required by the regulations. However, FI does not believe that a specific liquidity requirement in SEK should be introduced, as long as there are substantial reserves in EUR and USD, since it risks reducing the buffers in foreign currencies. The long-term structural liquidity risks in the Swedish banking system remain high in an international comparison. This is because of the specificities that characterise the Swedish banking system, with long-term mortgages that are funded by short-term market borrowing. With respect to such risks, international work is in progress to devise future regulations. FI believes that the banks should continue to extend the maturity of their funding of illiquid assets.

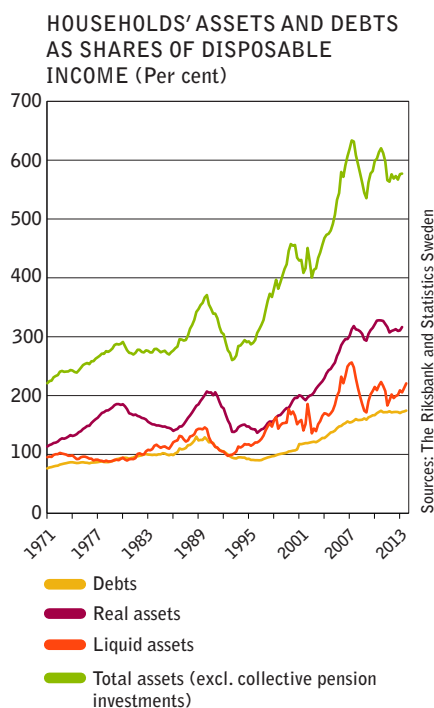
The international work to further strengthen the banking system continues in several other areas. For example, a requirement for publishing leverage ratios will be introduced. Requirements for binding leverage ratio levels might potentially apply as of 2018. The Basel Committee is also working on preparing proposals to standardise risk weight calculations with the aim of limiting the disparities between the internal models of different banks. Another important aspect is how the EU's newly decided crisis management directive will be implemented and applied, since it might involve requirements being placed on the loss-bearing capacity the banks must have in order to ensure orderly resolution if needed.

## INDEBTEDNESS AND THE REAL ECONOMY

FI's extended responsibility for stability also includes analysing financial imbalances among corporations and households. In general, Sweden is a country with a high savings rate, as evidenced in, for instance, the fact that Sweden has had a trade surplus for many years. At the same time, household indebtedness is high. High levels of mortgage lending increase the risk to household finances because of increased sensitivity to a drop in house prices, interest rate hikes and unemployment. At the same time, households have substantial assets and sound ability to pay, as shown in e.g. FI's mortgage survey. FI's stress tests show that most households can cope with substantial interest rate hikes and high unemployment, even in combination with a drop in house prices. FI therefore believes that household indebtedness primarily poses risks to the real economy, rather than major credit losses on the banks' mortgages.

The risk to the real economy is mainly about indebted households, as a consequence of e.g. a drop in house prices or higher interest rates, potentially cutting back on consumption. This would have negative consequences for growth. In order to reduce the risks that household indebtedness poses to society, FI can improve the resilience of the financial system on the one hand, and influence the supply of and demand for loans among households on the other. The overarching measures taken by FI to strengthen the resilience of the banking system in terms of capital and liquidity are of great importance in this context. This spring, FI also proposed increased risk weights for mortgages to 25 per cent, in order to address systemic risk in mortgages in particular. In order to curb the risks associated with the growth in household indebtedness, FI introduced a mortgage cap in 2010. In 2013 FI presented a proposal to strengthen amortisation culture by presenting amortisation plans for all mortgage customers, which has now been implemented by the banks.

FI finds that the various measures taken to reduce the risks associated



Note. As a share of disposable income. Liquid assets correspond to households' financial assets excluding insurance assets. Besides real and liquid assets total assets consist of private insurance assets. Real assets consist of single family dwellings, tenant-owner apartments and holiday homes.

with household indebtedness are currently sufficient. However, it is important to follow how the level of lending to households develops. FI's annual mortgage survey will be an important part of the future follow-up. If the situation clearly deteriorates, further measures may be required. Should such a situation arise, FI finds it most effective to address the ability and willingness of households to assume debt, such as by means of amortisation requirements, tightening the mortgage cap or by introducing Loan-to-Income ratio or Debt-service-to-Income ratio restrictions. At the same time, measures aimed at increasing the supply of homes, and changes to taxation would be more effective in curbing the risks associated with household indebtedness in the long run. However, any new measures must be introduced carefully, and one step at a time, in order for their effect to be measured and so as not to adversely affect the recovery of the economy.

## FI and the stability of the system

Financial crises incur major costs for society. It is therefore important that shocks are prevented to the extent possible, and that there is resilience should they nevertheless occur. One of Finansinspektionen's (FI) primary tasks is therefore to work to promote a stable financial system. FI has also been given broadened responsibility for stability, which involves a duty to take measures to counteract financial imbalances among households and corporations with a view to stabilising the credit market.

### FINANCIAL STABILITY – IN THE PUBLIC INTEREST

The financial sector fulfils key functions in the economy, and shocks can thus have major implications for production, employment and welfare. Experience from the latest financial crisis shows that, although a total meltdown of financial markets was staved off, the price was very high, both in terms of public finances and the real economy. According to the calculations of the International Monetary Fund (IMF), the costs of the crisis for European banks during 2007–2010 amounted to almost EUR 1,000 billion, or 8 per cent of the EU's GDP. The negative effects of banking and financial crises also tend to be protracted, and in certain cases permanent. For example, it is assessed that the crisis in Sweden of the 1990s and the 2008 financial crisis have had a long-term negative effect on the Swedish economy (diagram 1).

It is therefore crucial that shocks are prevented to the extent possible, and that resilience is in place if they nevertheless occur. Although firms on the financial market have a vested interest in a stable financial system, they often lack incentives to fully take account of the risks that arise. Authorities thus need to act to secure financial stability through regulation and supervision. In this context, a key concept is systemic risk; that is, the risk of severely disrupting or completely disabling key functions in the financial system.

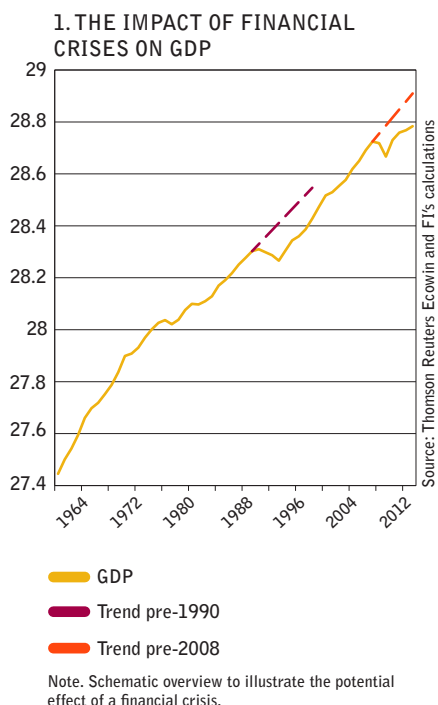
The Government has expressed the responsibility for stability as that Finansinspektionen shall:

*“... work to promote a stable financial system that is characterised by a high level of confidence and has well-functioning markets that meet the needs of households and corporations for financial services, and provide comprehensive protection for consumers.”<sup>1</sup>*

The emphasis in stability policy has traditionally primarily been on the major banks having the resilience to withstand credit losses. In recent years, not least in the international debate, the concept of macroprudential policy has been in focus. While there is no generally accepted definition of macroprudential policy, it can be described as analysis and measures that target the stability of the entire financial system. In FI's opinion, macroprudential policy is fundamentally an extension of the traditional supervision perspective, the expressed objective of which also covers stability in the financial system. An overly strict “micro-macro” breakdown of supervision is therefore not particularly useful in practice.<sup>2</sup>

<sup>1</sup> Finansinspektionen's Instructions Ordinance (2009:93).

<sup>2</sup> See e.g. FI's consultation comments on the interim report Preventing and managing financial crises.



#### ■ Different types of systemic risk

Systemic risks can be categorised in many different ways. A common breakdown is between structural and cyclical risks. Structural risks are rooted in how the financial system is structured, and its interdependence and interlinkage. Cyclical risks consist of the build-up of imbalances in the financial system over time, such as following protracted excessive credit growth.



This view was confirmed in the Government’s decision to bestow upon FI extended responsibility for stability, for what was called financial stability policy, which is expressed in the instructions as a duty:

*“...to take measures to counteract financial imbalances with a view to stabilising the credit market, but taking into consideration the effect of the measures on economic development.”<sup>3</sup>*

Financial imbalances should be seen in light of the fact that they can trigger a course of events in the financial market, particularly in the credit market, that can lead to substantial problems in the economy, without banks or other financial participants necessarily suffering major losses. A topical example is the increased indebtedness of households, which can give rise to problems, both for individual borrowers and the economy at large, even in the absence of major credit losses for the banks.

### Stability and consumer protection

The basis for stability supervision, and in a broad sense all financial regulation, is protecting society. The intention is to protect society and taxpayers from the consequences brought about by crises in the financial system. At the same time, there is a great need to also protect individuals when they use financial services, which is known as consumer protection. Many of the financial services offered on the financial market to the general public are complicated and difficult for consumers to judge. At the same time, they are key in daily life. FI therefore works very actively with these matters too, and its annual report Consumer protection on the financial market<sup>4</sup> highlights the risks that arise in the contacts between consumers and firms.

## WHAT CAN FI DO?

Although FI’s stability assignment is now more broadly formulated, FI still works through financial firms using supervision and regulation tools, primarily preventively. FI has a large toolbox that includes requirements for financial firms (such as capital requirements) and requirements that clearly influence users of financial services (such as the mortgage cap).

Other authorities also have a responsibility for financial stability. For example, tax rules are of great importance to incentives and risk-taking in the financial area. Rules about the housing market and housing construction indirectly affect risks associated with mortgages and household indebtedness. However, such decisions cannot be taken by FI, but are a matter for the Government and Parliament. Another tool that is of great importance from the point of view of stability is financial support for banks in a crisis; here, FI does not control the supporting funds.<sup>5</sup>

(SOU 2013:6) [http://www.fi.se/upload/43\\_Utredningar/30\\_Remissvar/2013/remissvar-finanskriskommitten-13-2721.pdf](http://www.fi.se/upload/43_Utredningar/30_Remissvar/2013/remissvar-finanskriskommitten-13-2721.pdf)

3 See Finansinspektionen’s Instructions Ordinance (2009:93) and Financial stability policy – a new policy area under development (Ds 2013:45).

4 <http://www.fi.se/Folder-EN/Startpage/Supervision/Other-reports/Listan/Consumer-protection-on-the-financial-market/>

5 Support for firms in crisis is the responsibility of the Government, the Riksbank and the National Debt Office, see the Financial Crisis Commission, <http://www.regeringen.se/sb/d/14255/a/160330>

It is against this backdrop and other factors that the Stability Council appointed by the Government should be seen.<sup>6</sup> The Financial Stability Council – consisting of representatives from the Ministry of Finance, Finansinspektionen, the Riksbank and the National Debt Office – meet at least twice a year.<sup>7</sup>

It is, however, also important to remember that financial supervision is largely about limiting and managing risks, but does not have the objective of eliminating all risks. A certain measure of risk-taking is a necessary feature of all business operations, if the business is to be run effectively.

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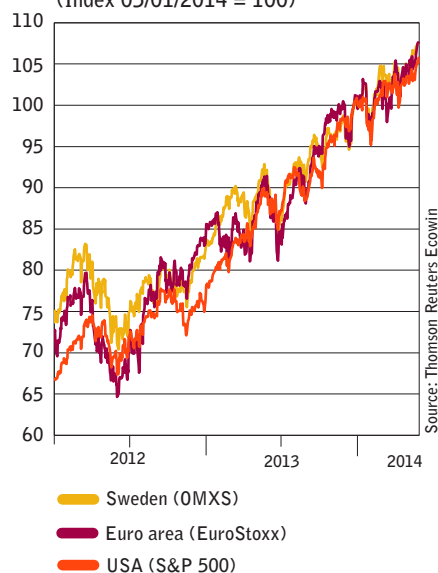
6 [http://www.riksdagen.se/sv/Dokument-Lagar/Utreddingar/Kommittedirektiv/Kommittn-for-finansiell-stabi\\_H1B1120/](http://www.riksdagen.se/sv/Dokument-Lagar/Utreddingar/Kommittedirektiv/Kommittn-for-finansiell-stabi_H1B1120/)

7 <http://www.fi.se/Tillsyn/Stabilitetsrad/Listan/Protokoll-fran-Finansiella-stabilitetsradets-mote-den-23-maj-2014/>

## The state of the economy

In the last six months, the development on financial markets has been relatively calm, and risk premiums have fallen. The situation on the important funding markets of the Swedish banks remains sound. The recovery of the global economy continues, which has also contributed to stabilising the situation on the financial market. However, the European economy remains fragile, and low inflation in the euro area, combined with the fact that risk premiums can quickly rise again, makes the economy sensitive to shocks. In Sweden too, the recovery is subdued and inflation is low, and weaker growth abroad combined with heightened financial unease could have substantial effects on the Swedish economy and financial stability.

2. STOCK EXCHANGES  
(Index 05/01/2014 = 100)



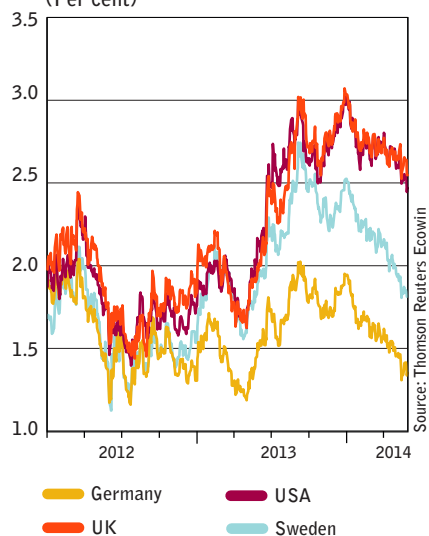
### CONTINUED STABILISATION

Financial markets have been calm since the turn of the year. The geopolitical unease in Ukraine during the spring indeed gave rise to a certain degree of financial unease. However, the effects are limited, at least initially, to the financial markets of Ukraine and Russia, where stock markets fell and the Russian rouble depreciated sharply. Global stock markets have surged in line with the strengthened economy (diagram 2).

Interest rate movements have been driven by the actions of central banks for some time. Uncertainty about when the Federal Reserve (Fed) would commence tapering caused the interest rates of stable countries to rise in the autumn. In line with the Fed becoming increasingly clear about interest rates being held low for long ahead, the uncertainty has decreased and interest rates have fallen (diagram 3).

In Sweden, interest rates have been largely affected by international movements, and Swedish rates have dropped since the turn of the year. This applies to both government bond rates and household mortgage rates (diagram 4). Interest rates on small and large<sup>8</sup> loans to non-financial corporations have also dropped somewhat (diagram 5). Interest rates on small loans in particular have fallen.<sup>9</sup>

3. GOVERNMENT BOND RATES, 10Y  
(Per cent)



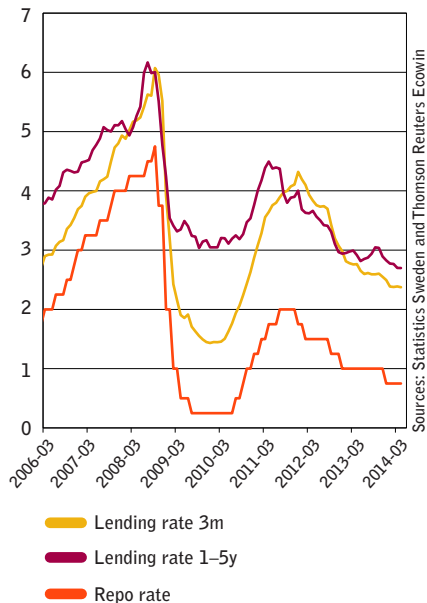
### The banks' funding

The cost of the banks' funding is related, among other factors, to covered bond rates. Since the beginning of 2011, covered bond rates have dropped, with the exception of a brief upswing at the beginning of 2013. The banks obtain funding at a low cost in an historical perspective. The interest rate that the banks pay to borrow from each other, the interbank rate, has also dropped in the past six months. Since the end of 2012, the interbank rate (3-month) has once again been below the two-year covered bond rate (diagram 6).

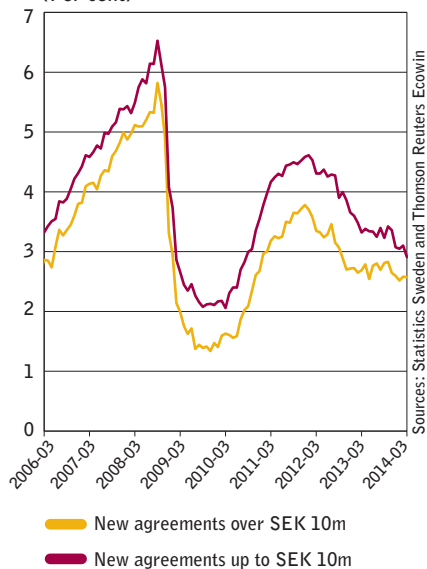
<sup>8</sup> Small loans refers to loans up to SEK 10 million, and large loans refers to loans exceeding SEK 10 million.

<sup>9</sup> 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. Because loans to smaller corporations are generally associated with a greater risk for the bank, it is reasonable to expect a certain difference in the borrowing expenses of large and small corporations.

#### 4. HOUSEHOLD MORTGAGE RATES (Per cent)



#### 5. LENDING RATES TO CORPORATIONS, SMALL AND LARGE LOANS (Per cent)



## FRAGILE GLOBAL ECONOMIC UPTURN

The global economy has brightened up somewhat in the past six months and in several countries, such as the US and UK, most economic indicators are pointing in a positive direction. The slowdown in the US economy that took place in the first quarter of 2014 seems to have been temporary and linked to the very harsh winter. Recently, the recovery has gained fresh momentum with clearer bright spots in the economy. For example, the US labour market has improved further and the debt adaptation of households seems to be over, giving greater scope for consumption ahead. Sustained expansive monetary policy and relaxed fiscal policy tightening also help boost demand. In May, the OECD believed that the US economy would grow by 2.6 per cent in 2014.

The recovery in the euro area is weaker, however. The euro area as a whole looks to have emerged from the recession, with GDP growth cautiously positive for the first quarter of 2014 (diagram 7). However, the recovery is uneven. Work on remedying the structural problems of indebted countries continued in the spring. For example, there has been progress in the process to introduce the common banking union. In May, the OECD believed that the economy of the euro area would grow 1.2 per cent in the current year.

In Sweden, the recovery has started to take off. Growth fell back in the first quarter of 2014 when it was 1.9 per cent, compared to 3 per cent for the fourth quarter of 2013. The high growth for the fourth quarter was partially driven by temporary factors, and a downward recoil in the first quarter was hence expected. Strong domestic demand and a sustained recovery in exports in the first quarter imply however a more lasting turnaround in the economy. For Sweden, which is a small and open economy, developments abroad, particularly in Europe, are crucial to the rate of recovery. In March, the National Institute of Economic Research expected Swedish GDP to increase 2.6 per cent this year and just over 3 per cent next year, although data released since then suggests somewhat weaker growth.

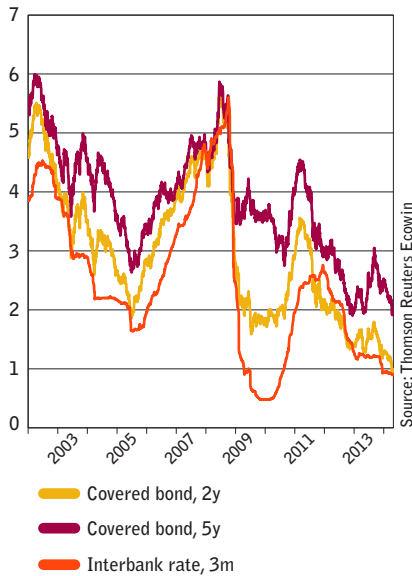
## FALLING INFLATION

Low capacity utilisation and the weak recovery have led to gradually lower inflation in e.g. the euro area and Sweden, which has also started to affect inflation expectations. A lower-than-expected inflation rate contributes to pushing up the real debt burden, i.e. debt in relation to the general price level. This can add to the build-up of financial risks and make it more difficult for households, corporations, governments and countries to adapt their balance sheets. If inflation is negative for a long period of time, deflation occurs, in which case a further increasing debt burden and expectations about falling prices can lead to sagging demand and hence lower prices. As shown by what has happened in Japan since the 1990s, it can be hard to break such a circle.

In the wake of the financial crisis, many central banks sharply cut their policy rates and took extraordinary measures in the form of quantitative easing in order to bring down market rates. Such measures have been effective and have hence created more favourable financing terms for investment and consumption during the global recession.<sup>10</sup>

<sup>10</sup> Since the end of 2008, the Federal Reserve has carried out three different rounds of quantitative easing. The latest round commenced in September 2012, entailing the Fed conducting monthly purchasing of government bonds and

## 6. BANK FUNDING (Per cent)



As the US economy has strengthened, the expectations of market participants about the Fed tapering quantitative easing have increased. In December, the Fed commenced tapering and monthly purchasing of bonds have subsequently been reduced in four stages, without any dramatic reactions from the market. Uncertainty about how general sentiment in the economy and financial market will be affected when the purchases cease entirely and the Fed starts selling off its bond holdings instead is high, however. Clear communication and sustained confidence-instilling action from the Fed are considered to be of great importance for tapering to continue without unease on financial markets and an impact on financial stability.

While the brighter economy enables the Fed to reduce its asset purchases and gradually embark on the journey to normalisation of monetary policy, the European Central Bank (ECB) needs to head in the opposite direction due to falling inflation in the euro area. The ECB has recently expressed strong fears about the generally low rate of price increases and the appreciation of the EUR, particularly versus the USD, that have occurred in the past year. The low inflation in the euro area slows down debt restructuring, curbs the recovery and worsens the possibilities of crisis-hit countries to restore their competitiveness.

On 5 June, the ECB therefore announced a cut in its policy rates and is launching further measures to underpin the economy. One of the policy rates is negative, which is seen as a relatively controversial move from the ECB. On top of the rate cuts, the ECB will also offer targeted loans that aim to improve access to credit for corporations and households (except for home buying).

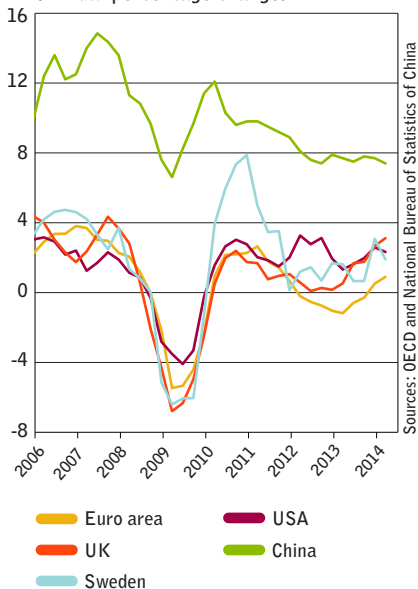
Because of the low inflation in Sweden, most experts now believe the Riksbank will cut the repo rate from the current 0.75 per cent at its next monetary policy meeting in July.

### Risk-taking has increased – there is a risk of a recoil

As the global recovery has stabilised, the investment appetite of investors has increased. This has led to a recovery of the equity market and narrowed spreads between corporate and government bond rates in Europe and the US. Likewise, government bond rates in indebted countries in the eurozone have dropped and are currently trading at levels approaching the German rates (diagrams 3 and 8). The drop in rates reflects to some extent improved economic outlook for these countries, but has also seemingly been driven by investors' search for yield in the low-rate environment. The increased risk appetite is also evidenced by spreads between low- and high-rated corporate bonds having narrowed substantially in the spring. These spreads are currently lower than the historical average.

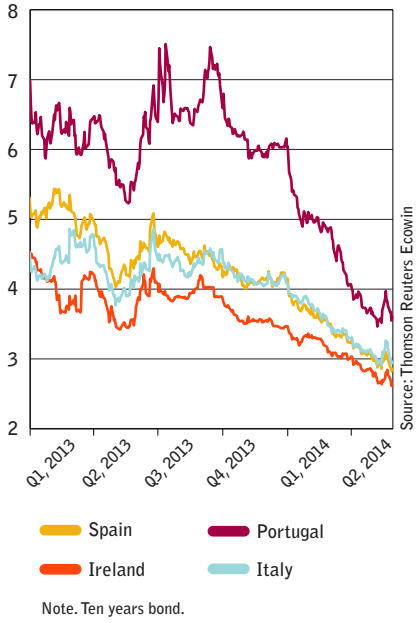
These narrowed spreads contribute to the recovery, but also carry a risk of a recoil to the extent that the downturn is based on unrealistic expectations about the quality of riskier assets. A correction of such expectations could add to a rapid build-up of financial stress and hence pose a threat to financial stability. A scenario of a shock, such as an escalation of the conflict in Ukraine or substantial financial instability in China, pushing up risk premiums in peripheral countries in the eurozone is not improbable. The weakening of the economy to which this leads, combined with very low inflation and weak public finances to start with, could

## 7. GDP (Annual percentage change)



mortgage bonds to a value of USD 85 billion.

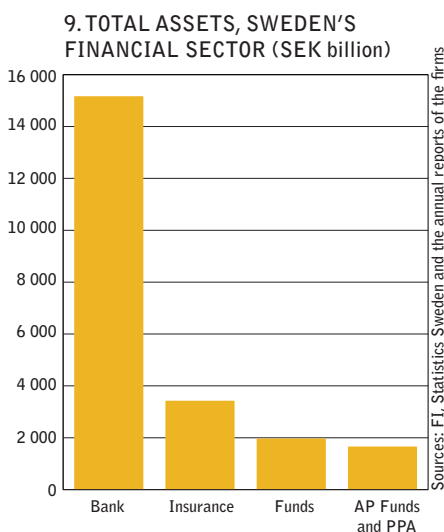
8. GOVERNMENT BOND RATES,  
INDEBTED COUNTRIES (Per cent)



create deflation pressure and hence further financial stress. Creating and maintaining buffers that can alleviate the effects of such events for the Swedish financial sector is crucial to Sweden's financial stability.

## The structure and interlinkage of the system

The Swedish financial system is large, concentrated and closely interlinked. The four major banks are at its core. These banks are inherently interlinked, through both direct exposure and indirect ones, in that they have similar business models and are exposed to similar risks. In difficult conditions, interlinkage can lead to problems at one firm spreading to other participants and markets. In order to manage the risks on the derivatives market, new regulations have given central counterparties (CCP) a greater role than before. The risk is hence concentrated to the CCPs, which creates a need for FI to strengthen supervision of the capital buffers and risk management of these firms.



Sweden's financial sector is, compared with the size of its economy, large in an international perspective. It consists of banks, mortgage institutions, credit market firms, insurance companies, management companies and pension funds (diagram 9). These have different functions, but are all important to the functioning of the Swedish financial system.

FI is the supervisory authority for all such financial institutions, but not all firms are important to the stability of the system in the sense intended by this report. The stability of the system is not just about how the individual firms function, but also about the links between different firms and markets. Interlinkage is fundamental to the ability of the financial system to execute payments, convert savings into funding and manage risks efficiently. In financial crises, the interlinkage of the financial system can instead lead to increased risks, and problems can spread between firms and markets.

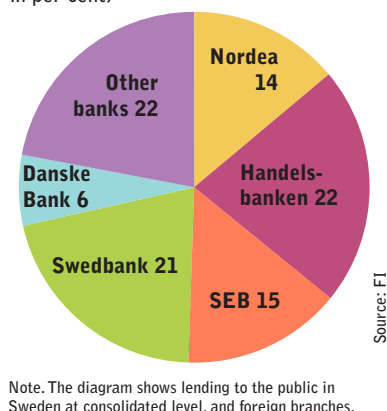
### THE MAJOR BANKS HAVE A UNIQUE POSITION

The Swedish banking sector accounts for the predominant share of the financial sector and is very large in relation to the Swedish economy. This is particularly true if the foreign operations are included (diagram 11). An important reason for the large financial sector is that the Swedish banks have a substantial foreign presence, mainly in the other Nordic countries and the Baltics.

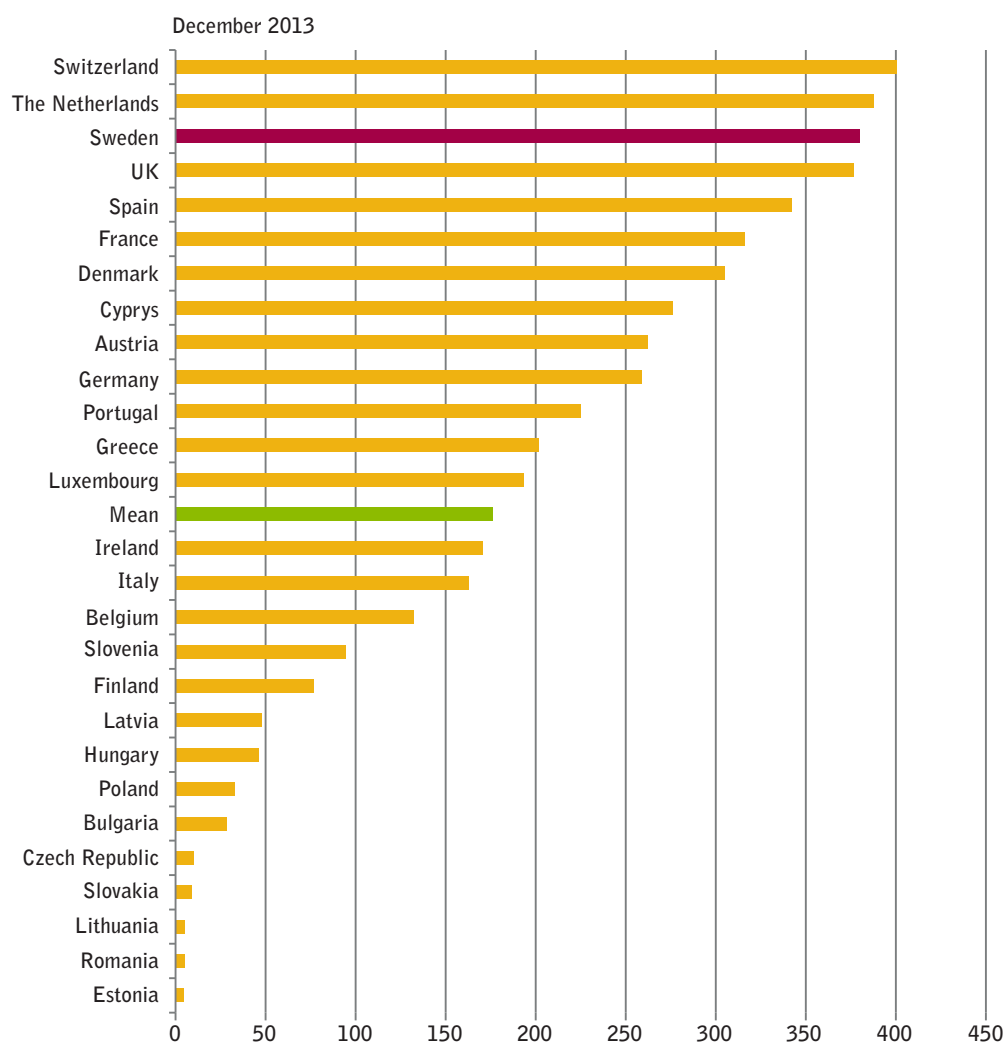
The Swedish banking system is also highly concentrated. For example, the four major banks account for almost three quarters of lending (diagram 10).

The banks are also a focal point of financial stability because they are sensitive to shocks. This is because the balance sheets of the banks have an illiquid asset side that mainly consists of loans to corporations and households, and a liabilities side that consists of more short-term liabilities. A bank can quickly experience financial problems and become illiquid if financiers start to lose confidence in it, even if such a loss of confidence proves unfounded. Also, financial contagion to other financial institutions often occur.

**10. CONCENTRATED SWEDISH BANKING SECTOR (Share of lending in per cent)**



## 11. The consolidated assets of the banking sector in relation to domestic GDP



Note. Definition of the banking sector based on the domiciliation of the parent bank.

Source: The Riksbank

### Systemically important firms

A firm whose default could have consequences that are so serious that it poses a systemic risk. Common factors for determining whether a firm is systemically important are: size, cross-border operations, interlinkage with the financial system, recoverability, complexity. The assessment varies over time, depending on the sensitivity of the financial system to shocks.

Which firms are systemically important partly depends on the situation.<sup>11</sup> In a crisis, for example, the situation of a smaller firm might be more important for preserving confidence on financial markets. However, FI finds that the position of the major Swedish banks is such that they merit special treatment in terms of e.g. capital requirements.<sup>12</sup>

11 For example, Carnegie Bank was considered to be systemically important during the most critical stage of the financial crisis in 2008.  
<https://www.riksgalden.se/en/omriksgalden/Bankstod/Stodatgarder-under-krisen/Carnegie-2/>.

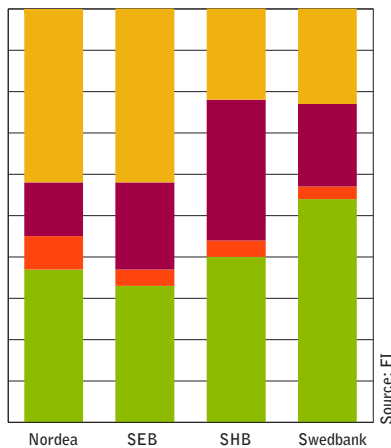
12 Read more in the chapter The resilience of Swedish banks.



### ■ Global systemically important banks

The Financial Stability Board (FSB) has classified 29 banks as systemically important to the global financial system. Such banks shall be subject to specific requirements in terms of capital and other loss-bearing liabilities. Nordea is one of the global systemically important banks and FI hence participates in work groups under FSB and the Basel Committee, etc. in order to develop supervision methods for cross-border, complex banking groups. For more information, go to ([http://www.financialstabilityboard.org/publications/r\\_131111.htm](http://www.financialstabilityboard.org/publications/r_131111.htm))

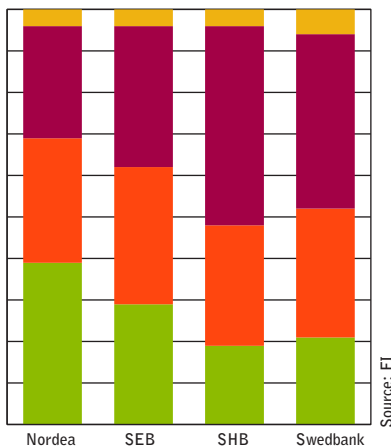
### 12. DISTRIBUTION OF LENDING (Per cent)



- Non-financial firms, other
- None-financial firms, real estate
- Households, other
- Households, mortgages

Note. Data refers to the fourth quarter of 2013, consolidated level.

### 13. DISTRIBUTION OF FUNDING (Per cent)



- Capital
- Issued
- Deposits
- Other

Note. Data refers to the fourth quarter of 2013, consolidated level.

### The banking system is interlinked

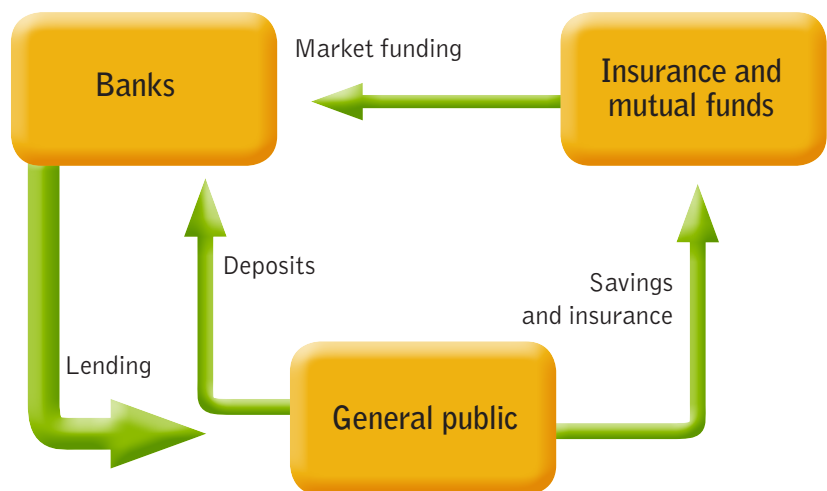
Besides the Swedish banking system being concentrated to a handful of major participants, it is also closely interlinked. The major Swedish banks are indirectly interlinked because they have similar business models. That is, the banks partially have the same structure in both assets and funding, such as in terms of geographic and sectoral exposures, and counterparties. If a major Swedish bank experiences problems, there is thus a high probability of the other major banks having, or at least investors and credit rating agencies believing they have, similar problems. On the interbank market, the banks also borrow from each other to manage liquidity deficits and surpluses.

The major banks are also directly interlinked because they own each other's covered bonds. If investors in covered bonds lose confidence in one of the major banks, the market value of the bonds will fall. This brings about losses at other banks, which hold the bonds in their liquidity buffer. Cross-ownership of bonds is thus a channel that contributes to spreading problems from one bank to another.

### The banks' need for market funding

The balance sheet composition of the Swedish banks and insurance companies is largely dependent on the needs and preferences of Swedish households and corporations. Because the general public in Sweden saves in funds and equities to a great extent, rather than depositing their money, deposits do not suffice to cover all lending. The banks therefore need market funding. The savings of the general public are channelled through insurance companies and mutual funds to both the Swedish and foreign fixed income and equity markets, and abroad (figure 1).<sup>13</sup>

FIGURE 1. Savings of the general public in deposits and through insurance companies and mutual funds

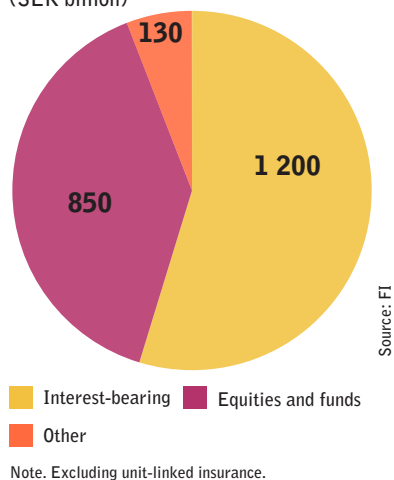


### THE INSURANCE COMPANIES' RISK TO STABILITY

Swedish life insurance companies are major participants on the Swedish financial market. At the end of 2013, the value of the investment assets of the insurance undertakings amounted to around SEK 3,400 billion, with 85 per cent or SEK 2,900 billion under the management of the life insurance companies. In unit-linked insurance, policyholders bear the market risk. If we also exclude these undertakings, the approximate amount

13 The major need for market funding, particularly from abroad, is addressed in the chapter The banks' funding structure.

14. ASSETS LIFE INSURANCE AND OCCUPATIONAL PENSION (SEK billion)

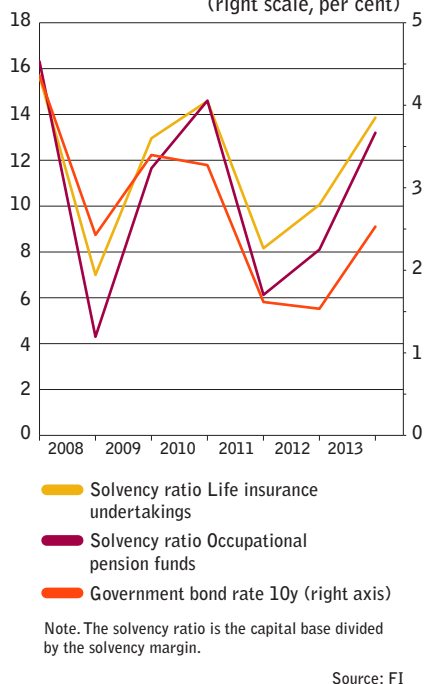


of SEK 2,200 billion remains (diagram 14) that is managed in traditional life insurance, which is rate-sensitive and most important from the point of view of stability. The AP Funds too (i.e. the Swedish national pension funds) manage major assets for Swedish pension commitments, totalling just over SEK 1,200 billion at the turn of the year 2013/2014.<sup>14</sup>

**Insurance undertakings are rarely systemically important firms**

Insurance undertakings have an important role on financial markets, but individual firms can only be considered systemically important in exceptional cases. Insurance is fundamentally more stable than banking operations. While banks have illiquid assets and volatile liabilities, insurance undertakings have liquid assets and stable liabilities. Insurance has a reverse cycle, with the undertakings receiving advance payment from their customers and paying out claims in arrears. In the short term and at the aggregate level, the payments are predictable. Generally, because of this, any problems at an insurance company primarily pose a risk to consumers. Customers can receive lower return on their savings or poorer insurance protection, but the problems will not spread to other firms. In FI's opinion, no individual Swedish insurance undertaking can currently be considered systemically important. There are many insurance undertakings that meet the size criterion, but they are not complex as a rule, and the largest do not have cross-border operations.<sup>15</sup> Even though no individual undertaking can be considered to be systemically important, it is important to take the insurance undertakings into consideration when working with financial stability. The firms are affected by, and affect, the trend on the securities market.

15. SOLVENCY IN LIFE INSURANCE (right scale, per cent)



**Interest rate-sensitive life insurance companies**

FI has, in previous risk reports, highlighted that particularly the long-term, guaranteed commitments involve problems linked to deficient market risk management at life insurance undertakings. Because of the major amounts, long durations and valuation based on market rates, Swedish life insurance undertakings show greater sensitivity to interest rates than life insurance undertakings in many other European countries. Because of this rate sensitivity, sharp declines in market rates and major contractions of the equity market can lead to solvency problems at the life insurance undertakings (diagram 15).

In order to swiftly improve solvency and reduce the risk level, firms may be forced to make short-term changes to their portfolios. These measures could amplify market fluctuations, giving rise to a procyclical turn of events. FI has, when introducing a Solvency 2-adapted discount rate curve, taken this into consideration when devising the regulations.<sup>16</sup> The new discount rate counteracts procyclicality, but still provides incentives for the life insurance companies to manage their market risks. Supervision of the life insurance companies is fundamentally motivated by consumer protection – protecting the funds of customers in this context.<sup>17</sup>

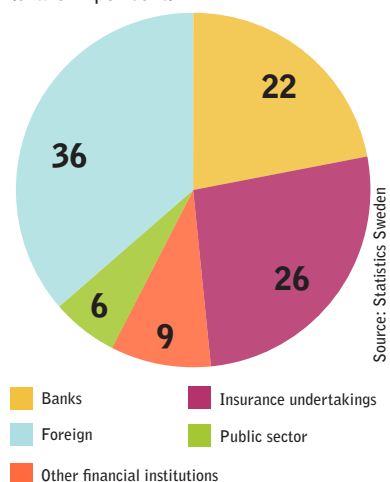
14 Source: The annual reports of the AP funds, potentially needs verifying

15 This conclusion is in line with the international work on the area, see e.g. Global Systemically Important Insurers: Initial Assessment Methodology, IAIS, July 2013 and EIOPA Financial Stability Report [https://eiopa.europa.eu/fileadmin/tx\\_dam/files/publications/finstability/Reports/may\\_2014/EIOPA\\_Financial\\_Stability\\_Report\\_-\\_May\\_2014.pdf](https://eiopa.europa.eu/fileadmin/tx_dam/files/publications/finstability/Reports/may_2014/EIOPA_Financial_Stability_Report_-_May_2014.pdf).

16 <http://fi.se/Regler/FIs-forfattningar/Samtliga-forfattningar/201323/>

17 <http://www.fi.se/Folder-EN/Startpage/Supervision/Other-reports/Listan/Consumer-protection-on-the-financial-market/>

16. OWNERS OF COVERED BONDS  
(share in per cent)



### Life insurance companies as the banks' financiers

Insurance companies have a major exposure to the banking sector through covered bonds. The insurance companies own 26 per cent of the Swedish banks' outstanding covered bond stock, which can be compared with the holding of Swedish banks of 22 per cent. Foreign institutions (36 per cent) are the only investor category with a higher share than the insurance companies (diagram 16).<sup>18</sup> Hence, problems on the covered bond market also have implications for the solvency of the insurance companies.

## FINANCIAL MARKETS

A conclusion that was clear from the latest financial crisis is that systemic risks can spread through financial markets. As described in the chapter The banks' funding structure, it is important to create liquidity buffers in order to enable the banking system to manage problems on funding markets. For the major Swedish banks, other crucial markets are mainly about access to the money market in SEK and foreign currency. In order to convert funding in foreign currency to SEK, the foreign exchange and interest rate derivatives market is also crucial.<sup>19</sup>

### Central counterparties reduce risks on the derivatives market

In the latest financial crisis, financial risks spread through the OTC derivatives market.<sup>20</sup> Following new requirements regarding the use of central counterparties for trade in OTC derivatives, central counterparties will have an increasingly key role in the financial system.<sup>21</sup> NASDAQ OMX Clearing AB (NOMXC) is a Swedish firm that conducts central counterparty clearing of derivative instruments. Clearing mainly pertains to equity, fixed-income and energy derivatives and other commodity derivatives traded on the NASDAQ OMX Stockholm and NASDAQ OMX Oslo, but also includes OTC derivatives. NOMXC was authorised on 18 March 2014 by FI as the first firm in the EU to be a central counterparty according to the EU's EMIR Regulation (European Market Infrastructure Regulation).<sup>22</sup> FI supervises NOMXC and also participates in the supervisory college for the Dutch firm European Central Counterparty N.V. (EuroCCP), which clears the Swedish equity market. The Riksbank participates as an observer in the supervisory college for London Clearing House.

Clearing through central counterparties means that counterparty risks, which were previously difficult to identify and assess, are concentrated to a handful of firms. This is positive for the stability of the system, but also means that all participants that trade in derivatives will have greater exposures to both NOMXC and foreign central counterparties.

18 The Swedish covered bond market and links to financial stability, *Economic Review* 2013, The Riksbank.

19 Also called the foreign exchange swap market.

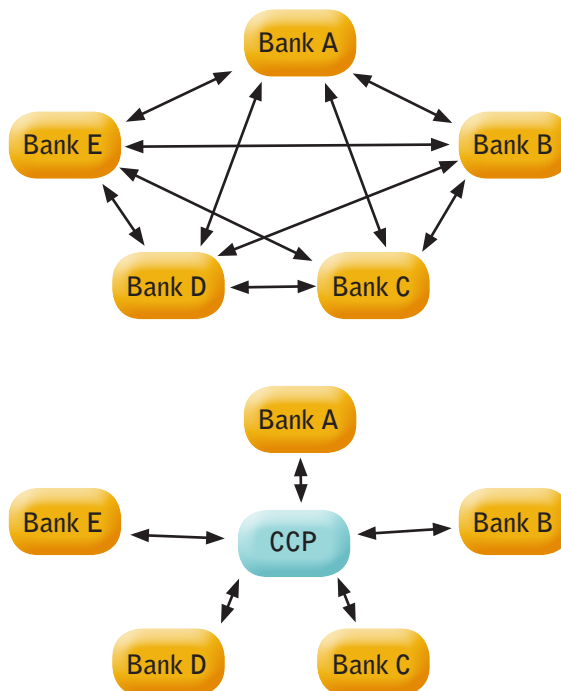
20 OTC (Over the Counter) – see glossary for definition.

21 To read more about the Riksbank's report on financial infrastructure, go to: <http://www.riksbank.se/en/Press-and-published/Notices/2014/The-financial-infrastructure-in-Sweden-functions-well/>

22 See FI's authorisation decision at: [http://www.fi.se/upload/40\\_Tillstand/00\\_beslut/2014/nasdaq-omx-clearing-13-4383.pdf](http://www.fi.se/upload/40_Tillstand/00_beslut/2014/nasdaq-omx-clearing-13-4383.pdf).

### Counterparty risk in relation to the central counterparty

Derivatives are financial instruments whose value growth is based on an underlying asset such as a commodity, currency or the creditworthiness of a firm. Firms can use derivatives either to reduce a given risk, or to assume a desired exposure. An OTC derivative is an agreement that commits two parties to each other. The market value of the derivative varies over time, depending on the performance of the underlying asset. If a counterparty cannot honour an agreement in which the counterparty has a net liability, a credit loss may arise. This type of risk is known as counterparty risk, and is thus not the same as the risk that the derivative is intended to counteract. Counterparty risk directly links together two financial firms through the derivative. In central clearing, the central counterparty steps in as an intermediary for standardised OTC derivatives. The original agreement between the counterparties is divided up into two new ones, giving the counterparties exposure to the central counterparty. The central counterparty has two agreements that reflect each other so that the central counterparty is not exposed to market risk. With requirements for central clearing, the firm gains an overall exposure to the central counterparty that corresponds to all standardised OTC derivatives it previously held with other counterparties.



Losses at or delayed deliveries from one participant can spread to other participants through the central counterparty and have consequences for the financial system. Hence, a central counterparty is required to have robust systems and resources for managing the losses and liquidity requirements that arise, and must be able to cope with a situation of a default of the two members that are largest exposure-wise. Continuously marking-to-market its exposures, regularly accepting liquid collateral, maintaining access to pre-financed funds in the form of equity and contributions from participants to a loss distribution fund, ought to provide protection from losses.

It can generally be said that, even if central counterparties have high operational reliability and are well capitalised, they pose a concentration risk to the financial system. In FI's opinion the probability of a central counterparty defaulting is low, but the consequences could be serious in the event of it occurring.

## The resilience of Swedish banks

The capitalisation of Swedish banks is currently satisfactory, and earnings remain healthy. At the same time, because of the size, concentration and interlinkage of the Swedish banking system, problems in this sector can pose a threat to the economy. In order to secure sound capitalisation ahead, capital requirements are now being increased. According to the information provided by FI, the common equity Tier 1 capital requirement for the major Swedish banks will be more than double the minimum requirement stipulated by the EU. Also, the requirements are being introduced faster than the EU requires.

### THE BANKS' OPERATIONS

The basis for a smoothly functioning banking system is that the banks conduct sound operations and can cope with supplying credit to the economy. This requires the banks to be well capitalised. Compared with the situation in many other countries, the Swedish banks have maintained healthy profitability in recent years. The major banks recovered relatively swiftly after the most acute phase of the global financial crisis. Profitability measured as average return on equity has, since 2010, been between 10 and 15 per cent for the major banks (diagram 17). The profitability of the smaller banks too has recovered, but is on average lower than that of the major banks. Stable credit quality and relatively high profitability have helped increase the resilience of the banks to shocks, which strengthens financial stability.

The rapid recovery of the economy in Sweden and the measures taken particularly in the Baltic economies led to a sharp improvement in the credit quality of the banks' lending portfolios. It was possible to reverse the credit loss provisions required during the crisis to a certain extent in 2010 and 2011. Credit losses have generally been low since then, both for the major banks and the smaller ones (diagram 18).

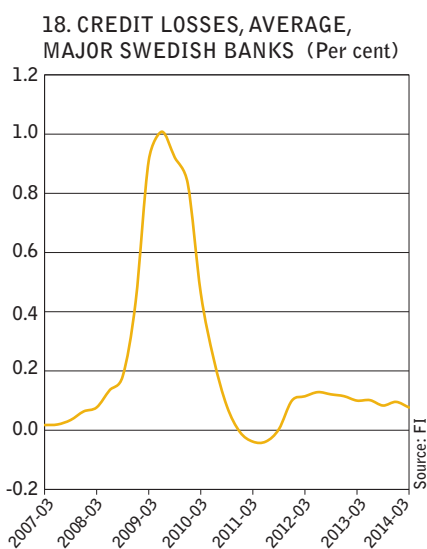
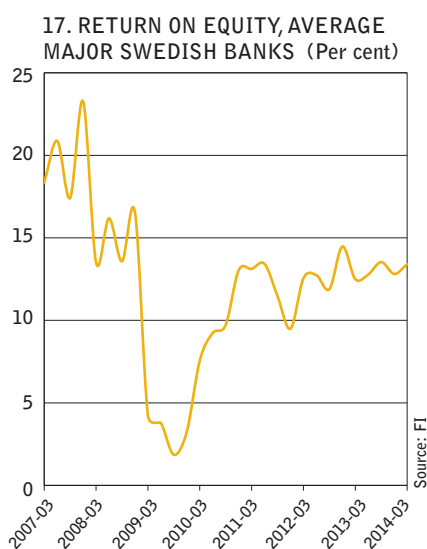
Increasing lending has eased the recovery in profitability (diagram 19). In the Baltic operations, volumes have decreased, but on most other markets the Swedish banks have grown. In Sweden in particular, developments have been driven by growth in lending to households, while the increase in lending to corporations has been smaller.

#### Capitalisation has strengthened since the crisis

In recent years, Swedish banks have also gradually strengthened their capital adequacy. In the financial crisis, three out of four major banks raised new capital through the capital market. This, combined with healthy profitability and reduced risk-weighted assets, has helped to substantially improve the major banks' capital in relation to risk-weighted assets (diagram 20). Capital in relation to total assets has increased too (diagram 21).

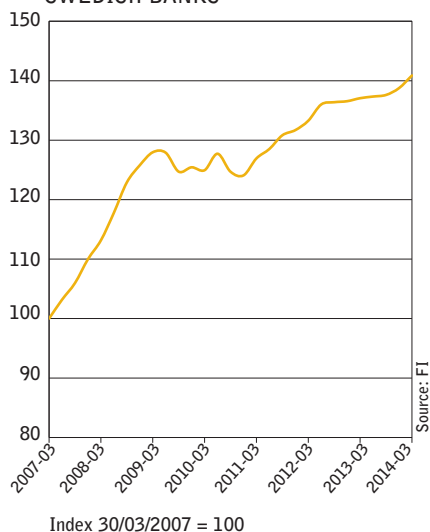
#### Stress tests show resilience

Stress tests are one of the tools employed by FI in its supervision of banks. FI regularly carries out such tests to assess the banks' ability to withstand various negative scenarios. Stress tests are also used in the annual supervisory review and evaluation process of the banks' capitalisation. There is an important difference between the method used by FI to date and the stress test performed by the European Banking Authority



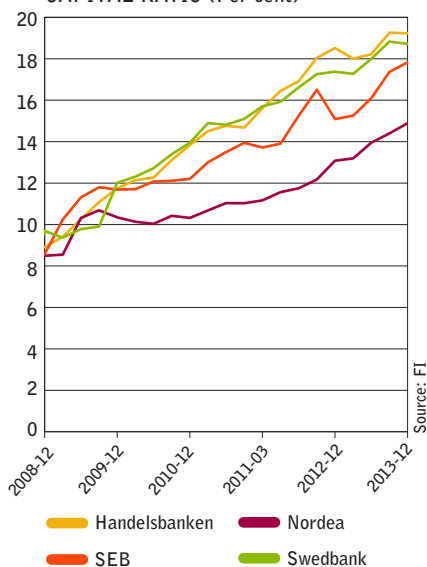
Note. The diagram refers to provisions for credit losses on an annualised basis in relation to total lending.

19. LENDING TO THE PUBLIC, MAJOR SWEDISH BANKS

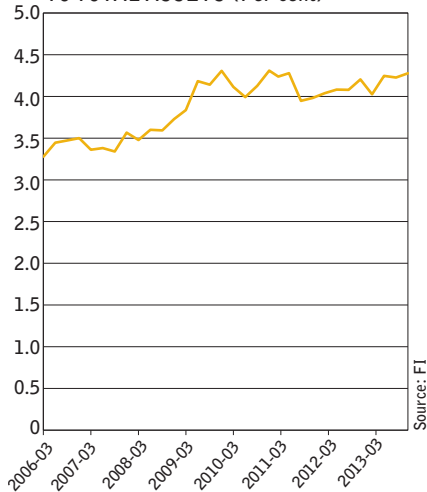


Index 30/03/2007 = 100

20. COMMON EQUITY TIER 1 CAPITAL RATIO (Per cent)



21. TIER 1 CAPITAL IN RELATION TO TOTAL ASSETS (Per cent)



Note: Average major Swedish banks

(EBA) and the banks themselves, because it is not based on an economic forecast made on the present state of the economy. FI conducts its stress tests based on public information and does not distinguish between the banks in terms of e.g. earnings stability or the credit quality of the various segments. FI assumes a schematic drop in earnings and a standardised progression in credit losses in various segments and markets in order to simulate the effect of these changes on the banks' financial positions.<sup>23</sup>

According to this method, FI's stress test currently shows that the major banks have satisfactory resilience to a scenario of a sharp deterioration in business conditions resulting in declining earnings and high credit losses in all lending segments. In the stress test's scenario, the aggregate credit losses of the four major banks are estimated to a total of approximately SEK 270 billion. The risk-weighted assets are furthermore assumed to increase in the scenario, so the overall effect would equal a deterioration in the common equity Tier 1 capital ratios of between 1 and 1.5 (at the most) per cent per bank. If the risk weight changes in the stress test are adjusted to take account of the risk weight floor for mortgages, the effects amount to between 0.5 and 1.3 per cent. None of the major banks show a common equity Tier 1 capital ratio below 12 per cent<sup>24</sup> in the scenario. However, all banks would not cover the total capital requirement including Pillar 2 requirements and all buffer requirements. Use of the buffers might involve restrictions on, for instance, share dividends and bonuses.

#### Asset Quality Review (AQR) and EBA's stress test of European banks

Part of FI's supervision of the banks in 2014 comprises an extensive credit risk assessment according to EBA's guidelines, known as the Asset Quality Review (AQR). This review is performed throughout the EU, although it was initiated following the ECB assuming supervision of banks in the euro area. Work on the review commenced in the autumn of 2013 for Nordea, Swedbank, SEB and Handelsbanken and aims to assess the quality of the banks' assets and identify risks in lending. A highly comprehensive sample review commenced in mid-March 2014. The method for conducting the AQR and portfolio selection have been adapted to the ECB's asset quality review method. The sample review conducted by FI is estimated to include 800–1,000 customer groups per bank. The review period extends through September 2014. FI is in regular contact and collaborates with other supervisory authorities regarding the AQRs conducted for the foreign subsidiaries of the major Swedish banks. Reporting to the EBA will take place during June–October in accordance with the EBA's recommendation.

The EBA's stress test is based on data from the turn of the year in 2013 and the scenario relates to 2014–2016. It covers a total of 124 banks, which together make up 80 per cent of the EU's banking market. The four major Swedish banks are included in the test, as in previous years. The results will be published in October. As supervisory authority, FI is responsible for the proper application of EBA's method to the Swedish banks.

23 [http://www.fi.se/upload/90\\_English/20\\_Publications/10\\_Reports/2013/stresstest20131\(eng\).pdf](http://www.fi.se/upload/90_English/20_Publications/10_Reports/2013/stresstest20131(eng).pdf)

24 Level from the November Accord between the Riksbank, FI and the Ministry of Finance.

## WHY CAPITAL REQUIREMENTS ARE NEEDED FOR BANKS

High capital adequacy not only increases resilience in the event of credit losses, but also reduces the risk of liquidity problems. Compared with other firms, banks generally have high indebtedness and a low share of equity. One reason for why the banks fund themselves with equity to such a small extent is that they take advantage of a number of explicit and implicit government guarantees that reduce borrowing costs and hence give shareholders the incentive to want as high a share of loan financing as possible. This makes depositors and other lenders less sensitive to the bank's risks. This is particularly the case when the banks are considered to be systemically important (too-big-to-fail), and the government is expected to be forced to rescue the bank in a crisis.

One way of estimating the economic costs entailed by being "too-big-to-fail" is to look at the differences in the banks' borrowing costs. The IMF estimates the value of the indirect support for banks at USD 15–70 billion in the US and USD 90–300 billion in the euro area.<sup>25</sup> There is thus a substantial need for reforms to ensure that systemically important firms bear the costs of their operations. Increased capital requirements are such a measure. One of the main purposes of the decided regulations in the EU for managing banks in crisis is also that shareholders and financiers bear the losses instead of the government.

### **The Bank Recovery and Resolution Directive, BRRD (crisis management directive)**

In light of the fact that, in the latest financial crisis, taxpayers in many cases had to rescue banks that had defaulted, the EU has drawn up regulations for managing banks in crisis. According to the new directive, the costs for rescuing banks shall be borne by the bank's shareholders and creditors. The provisions of the directive partially give the competent authorities of Member States new powers to prevent and manage banking crises. These include in particular the possibility and, in certain cases, the obligation of the authorities to write-down the liabilities of the bank in crisis, and/or convert the liabilities into shares in the bank. To enable this, the banks will be obliged to meet a minimum requirement in terms of own funds and eligible liabilities.

It is hence a supplement to the capital adequacy rules, as it can also regulate debt instruments not included in own funds. The Directive was adopted in May 2014 by the Council and the European Parliament. At the end of June 2014, the Swedish Financial Crisis Commission will present its report on how the rules of the Directive are to be incorporated into Swedish law. Most of the rules of the Directive will be applied as of 1 January 2015, but the tools for write-down of liabilities must be in place by 1 January 2016 at the latest.

## STRICTER REQUIREMENTS INTRODUCED FOR SWEDISH BANKS

In order to create further resilience in the banking sector, requirements for the banks are now being increased internationally. The international agreement regarding higher capital requirements, often called Basel 3<sup>26</sup>, which was reached by the Basel Committee and subsequently became

25 IMF (2014), Global Financial Stability Report.

26 Basel 3: A global regulatory framework for more resilient banks and banking systems, December 2010, and updated in June 2011, [www.bis.org](http://www.bis.org).



EU legislation<sup>27</sup>, is now being implemented in Sweden. The new requirements shall, according to the Government bill, primarily come into force on 2 August 2014.<sup>28</sup> The bills authorise FI to decide on more matters which, on the whole, have a major effect on the capital requirements of banks. On 8 May 2014, FI therefore published a memorandum explaining how the capital requirements for the Swedish banks will be tightened.<sup>29</sup> FI's positions largely cover four areas:

- Capital requirement for systemic risk of five percentage points for the major banks
- Increase to the risk weight floor for Swedish mortgages to 25 per cent
- Activation of the countercyclical buffer at a level of 1 per cent
- FI's supervisory review and evaluation process (Pillar 2) in the new regulations

### The new Swedish capital requirements

**Systemic risk:** In FI's opinion, the Swedish financial system, and ultimately the economy, is exposed to structural risks because the most systemically important banks, (i.e. the four major banks currently) operate on a concentrated market with similar exposures and are closely interlinked. FI is therefore implementing the November Accord from 2011 between FI, the Ministry of Finance and the Riksbank, according to which the four major Swedish banks shall, as of 2015, hold a further 5 per cent in common equity Tier 1 capital for systemic risk.<sup>30</sup>

**Risk weight floor:** FI decided in 2013 that risk weights used for calculating capital requirements for mortgages should be at least 15 per cent. The introduction of a risk weight floor of 15 per cent was a sharp increase from the average risk weights of 5 per cent that had ensued from the banks' own internal models. This decision was based on an assessment that the internal models did not fully reflect the risk of future credit losses linked to Swedish mortgages at a high level of financial stress. Now, FI believes that the risk weight floor should be raised to 25 per cent. The reason is that this requirement, in accordance with the new legislation, should also reflect the systemic risks that can be associated with Swedish mortgages.<sup>31</sup>

**Pillar 2:** Pillar 2 comprises the rules that govern firms' internal capital adequacy assessment process, and the supervisory authority's review and evaluation process, of which FI's supervisory review and evaluation process forms an important part. Pillar 2 supplements the more mechanical capital adequacy assessment in Pillar 1. In FI's opinion, Pillar 2 will have an important

27 Directive 2013/36/EU of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, and Regulation (EU) No 575/2013 of 26 June 2013 on prudential requirements for credit institutions and investment firms.

28 See prop. 2013/14:228 Strengthened capital adequacy rules.

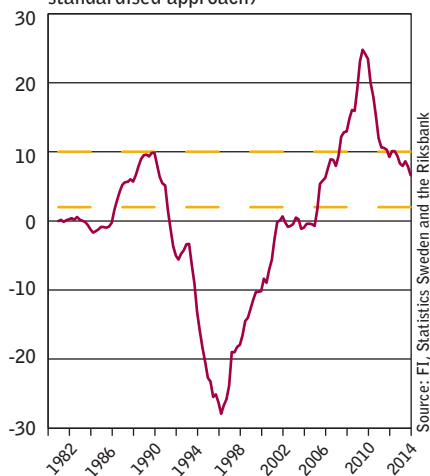
29 See FI's memorandum Capital requirements for Swedish banks <http://www.fi.se/Folder-EN/Startpage/Supervision/Miscellaneous/Listan/Capital-requirements-for-Swedish-banks/>

30 <http://www.fi.se/Folder-EN/Startpage/Supervision/Miscellaneous/Listan/Finansinspektionen-would-like-higher-capital-requirements-for-major-Swedish-banks/>

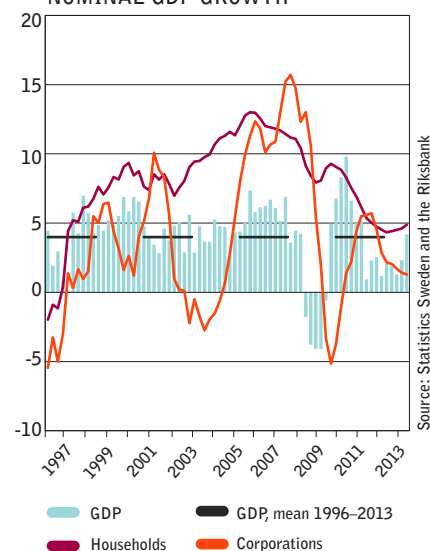
31 For the rationale about household debt, see the section Household indebtedness.

role in the new regulations. FI's intention is for the methods used to calculate the aggregate capital requirement to be standardised, and hence transparent, to a greater extent. Also, Pillar 2 risks are to be covered by common equity Tier 1 capital to a greater extent than before.

22. CREDIT GAP (according to the standardised approach)



23. LENDING GROWTH RATE AND NOMINAL GDP GROWTH

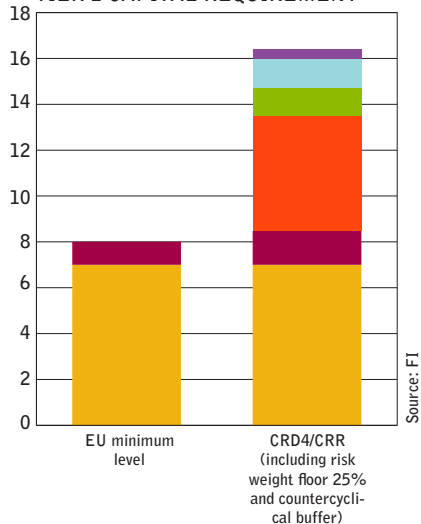


**Countercyclical buffer:** The countercyclical capital buffer is a new capital requirement that will vary over time. The countercyclical capital buffer shall be activated or increased in economic upswings, when credit growth is high, and be released in downturns in order to facilitate sustained credit supply. FI's overall opinion is that the countercyclical capital buffer rate should currently be 1 per cent, particularly in light of the growing household debt.<sup>32</sup> This position is partly based on FI's qualitative assessment, and partly on various quantitative indicators. FI has set a buffer guide rate calculated according to the standardised approach of the Basel Committee.<sup>33</sup> It is based on the credit gap, defined as the deviation of the credit-to-GDP ratio from its long-term trend (diagram 22).

According to the latest available data (fourth quarter of 2013), the credit gap is positive and corresponds to a countercyclical buffer guide, according to the rule, of 1.5 per cent. However, credit growth does not currently appear to be excessive in Sweden (diagram 23), indicating that the buffer level

should be set lower than 1.5 per cent. Corporate lending is growing slower than nominal GDP, and in FI's opinion there is no credit-driven build-up of risk in the corporate sector. Household credits are growing somewhat faster than nominal GDP, but the growth has slowed down and credit progression is in line with the disposable income of households. At the same time, household indebtedness remains high both in an historical and international perspective, and it is predominantly household indebtedness that has contributed to the build-up of debt in Sweden. As discussed in more detail in the memorandum Proposal for regulations regarding the countercyclical buffer rate (sw. Förslag till föreskrifter om kontracykliskt buffertvärde), a buffer level of 1 per cent is therefore considered to be reasonable at present.

24. SWEDISH COMMON EQUITY TIER 1 CAPITAL REQUIREMENT



- Countercyclical capital buffer 1%
- Mortgage risk weights 25%
- Mortgage risk weights 15%
- November Accord
- Other Pillar 2 risks
- EU minimum level

According to the overall information provided by FI, the common equity

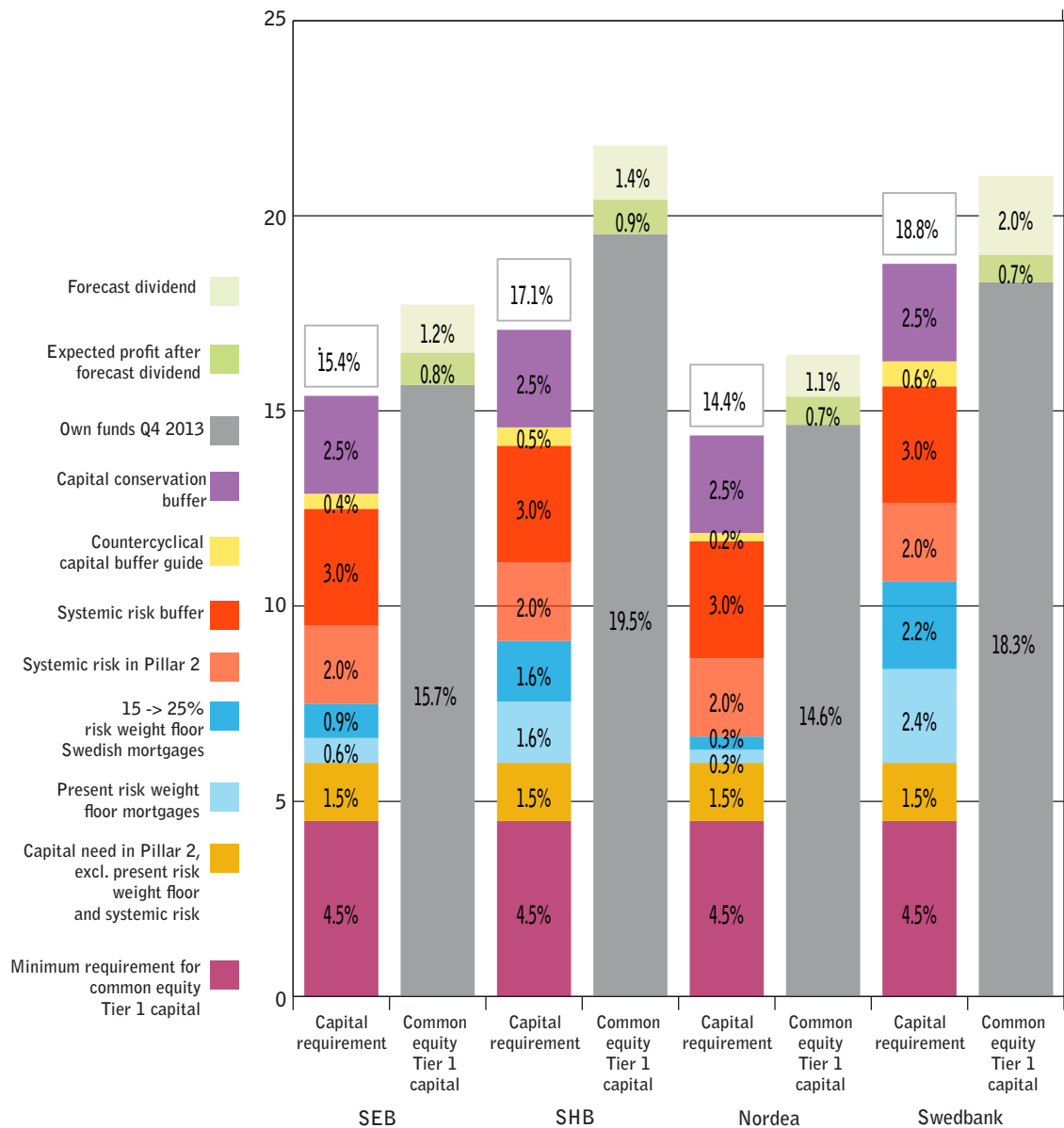
32 See <http://www.fi.se/Regler/FIs-forfattningar/Forslag-nya-FFFS/>

33 BCBS (2010), Guidance for national authorities operating the countercyclical capital buffer.

Tier 1 capital requirement for the major Swedish banks will be more than double the minimum requirement stipulated by the EU (diagram 24). Also, the requirements are being implemented faster.

FI believes that the major banks will be able to meet the new capital requirements (diagram 25). At the same time, it can be seen that the requirements vary for different banks. The total common equity Tier 1 capital requirement<sup>34</sup> is estimated to vary between 14.4 and 18.8 per cent. The differences between the banks are mainly due to the breakdown of mortgages and other lending, and how large a share of the operations is conducted in Sweden and is hence covered by the countercyclical capital buffer. Because of the need for continuing adaptation, certain banks still need to show restraint in measures that weaken their resilience, such as profit distribution and share buybacks.

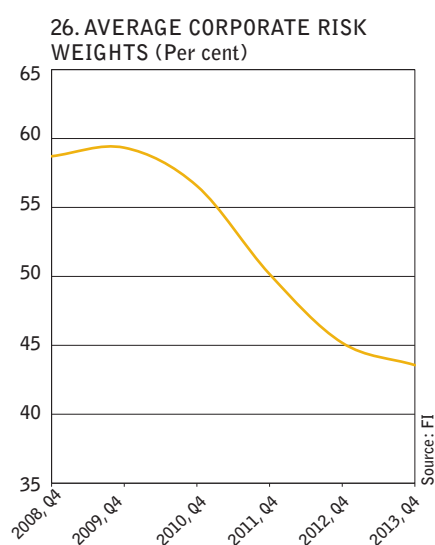
### 25. Common equity Tier 1 capital, major Swedish banks



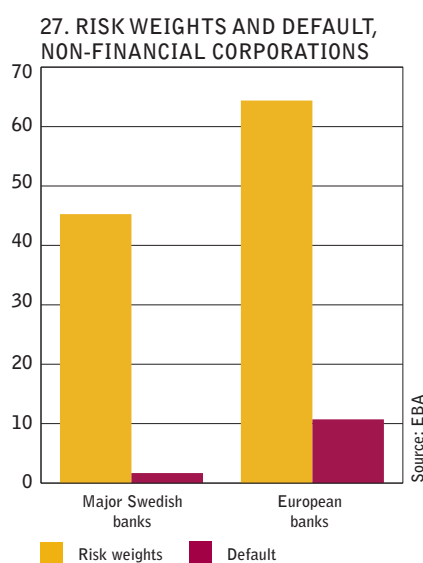
34 See the glossary for the definition of common equity Tier 1 capital.

## RISK WEIGHTS AND CAPITAL REQUIREMENTS

Since 2007, Swedish banks have had the possibility, using internal, statistical models, to calculate risk weights, known as the internal ratings-based approach (IRB) instead of using the standardised approach. Since then, average risk weights have dropped sharply at the banks authorised by FI to use such models. Several factors contribute to the decrease to the average risk weights for the banks' assets. Besides improved credit quality for the existing assets, a large part of the reduction is due to an altered composition of the loan portfolio, with a higher share of assets with low risk weights, such as lending to Swedish households, and a smaller share of lending to corporations and geographic markets for which credit risk, and hence risk weights, are higher. Besides such actual differences in the credit quality and altered portfolio composition of existing assets, risk weights have however decreased for the very reason that more of the banks' loan portfolios have met the requirements to be risk-weighted using internal rating methods.



FI finds it positive that banks are able to apply for and employ better rating methods, because it means better control of the risks that are present, and the ability to use capital more effectively than if more or less blunt standardised methods were used. There are however risks in the uncritical usage of internal models, because the banks have incentives to hold less capital than what would be a balanced level with respect to the economy (see the section Why capital requirements are needed for banks). The models are also retrospective by nature because they are based on historical data. It is therefore important that the internal models approved by FI accurately reflect risks in the portfolio, and do not unduly reduce the risk weights and hence the capital requirement. In terms of mortgages, FI has already taken measures to address the fact that the historical data on which the model estimates are based does not show a reasonable level for the overall risk that lending creates for the bank and financial system. Risk weights have also decreased for corporate exposures (diagram 26). The low risk weights reflect the fact that Swedish banks have, for a long period of time, had very low credit losses, both historically and compared to foreign banks (diagram 27). Just like for mortgages, however, low risk weights also carry a risk of underestimating future credit losses.



Note: The diagram shows the average of the European banks with IRB-models that participated in EBA's EU-wide transparency exercise and the four Swedish major banks. Default refers to the share of exposures in default in relation to the total exposures.

A supplementary approach to capitalisation is that the assessment of the bank's risks should not affect the capital need; rather, this should be set as a share of the bank's assets, irrespective of the risk level. This approach forms the basis for forthcoming leverage ratio regulation, which is currently under evaluation and might become a new binding capital requirement from 2018. The Basel Committee is also working on preparing proposals to standardise risk weight calculations with the aim of limiting the disparities between the internal models of different banks.

### Economic consequences of increased capital requirements for banks

Increased capital requirements for banks contribute to a more stable banking system, reduced macroeconomic fluctuations and a lower risk of the need to use public funds to bail out the financial system. Several studies indicate that increases to capital requirements in line with those currently under implementation are gainful for the economy – i.e. the profits outstrip the costs.<sup>35</sup> It is currently too early to conduct a full-scale analysis of the

35 Admati et al., Fallacies, Irrelevant Facts and Myths in the Discussion of Capital

consequences for the national economy of the tightened capital requirements in line with the rationale above. Consequences such as higher entry barriers with implications for competition on the market, and the fact that stricter requirements might lead to banking operations diverging from or circumventing regulations, are not addressed in this analysis.

However, a partial analysis of the costs can be performed. In such an analysis, the negative effects of the new requirements are overestimated, because the analysis does not take account of the fact that a higher share of equity makes the banks less risky, and that the required return on their share capital should hence decrease. At the same time, a less risky bank ought to have access to cheaper debt financing if the share of capital increases. Neither does the calculation take account of economic gains, and it should therefore be seen as an estimation of maximum effects on the cost side.

#### A partial analysis of the effects of increased capital requirements

The recently announced increases to capital requirements for Swedish banks including the entire increase to risk weights for mortgages from 5 to 25 per cent equal an overall increase of around SEK 230 billion, or 8 percentage points, compared with the EU's minimum capital requirements under Basel 3. If required return is kept constant at 15 per cent while borrowing costs are assumed to be unchanged, this means that the lending rate increases by around 0.6 percentage points on average. In the calculation, it is assumed that the higher capital costs are fully transferred onto customers, and this estimation should therefore be seen as an upper limit to the consequences of increased capital requirements on lending rates.

The higher interest rates reduce the profitability of the investments of borrowers. Lower investments lead in turn to a lower capital stock and a lower GDP level if account is only taken of the cost side. In 2010, the Bank of International Settlements (BIS) conducted a similar partial analysis of the long-term effects of increased capital requirements.<sup>36</sup> The analysis indicated that an increase to capital requirements equalling 1 percentage point in the long term leads to a 0.2 per cent drop in the GDP level. Hence, the negative effect of the increased capital requirements of 8 percentage points could at most equal a reduction in the GDP level of 1.52 percentage points after 4.5 years. The Riksbank has performed a similar analysis for Sweden, and found that the effects were lower than in the BIS study – an increased capital requirement equalling 1 percentage point would, after 4.5 years, reduce the GDP level by 0.1 per cent.<sup>37</sup> Furthermore, the analysis performed by BIS shows that, after the drop in GDP, the GDP trend tends to pick up and converge towards the original scenario without increased capital requirements.

Opinions about the short-term effects are more diverged, because of different calculation assumptions and initial circumstances. The short-term effects of an unforeseen increase to the capital requirement might be significant, partly because increased capital requirements can then lead to an abrupt reduction in lending, and partly because new share issues can be costly.<sup>38</sup> This highlights the importance of giving the banks time to adapt their capitalisation to new requirements.

Another important factor in the short term is if stabilisation policy is used

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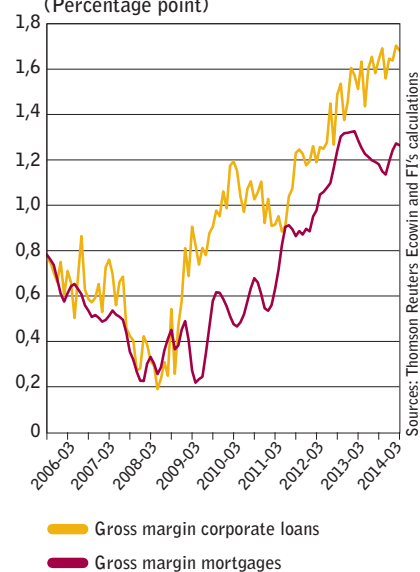
Regulation: Why Bank Equity is not Expensive, 2010, Stanford GSB Research Paper No. 2063; Miles et al, Optimal Bank Capital April 2011; The Riksbank, Appropriate capital ratio in major Swedish banks – an economic analysis (2011).

36 BIS, (2010), Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements, Macroeconomic Assessment Group (MAG), Basel.

37 The Riksbank (2011), Monetary Policy Report, February 2011.

38 Admati, 2010

28. GROSS MARGINS FOR MORTGAGES AND NON-FINANCIAL FIRMS  
(Percentage point)



to facilitate the phasing-in process. Analyses that assume that monetary policy is not adapted when the new capital requirements are introduced, such as BIS (2010) and Slovik and Cournède (2011)<sup>39</sup>, generally show greater negative effects than the studies in which monetary policy is allowed to react (the Riksbank, 2011).

#### The banks have already allowed for higher capital requirements

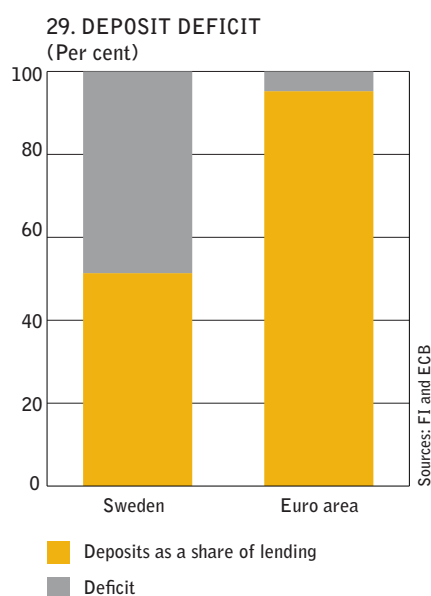
The Swedish banks have, since the November Accord in 2011, been aware that capital requirements will be tightened. They have therefore gradually increased their capitalisation and at the same time increased their gross margins with a view to maintaining their

required return (diagram 28). Hence, the adaptation costs ahead for the banks and the Swedish economy are considered to be low. FI will carefully monitor such developments and also plans to develop the consequence analysis for the national economy to include the economic gains brought about by the stronger capitalisation of banks. On the whole, it is believed that the higher capital requirements will lead to both stronger banks and a stronger economy in time.

39 Slovik, P. and B. Cournède (2011), "Macroeconomic Impact of Basel III", OECD Economic Department Working Paper, No. 844.

## The banks' funding structure

Swedish banks have a great need for market funding, which makes them vulnerable to weakened market confidence. Creating buffers that can soften the effects of a turn for the worse abroad is therefore a crucial factor in terms of stability. The banks currently have sound access to funding, and short-term liquidity risks have decreased in Sweden in recent years. This is largely because FI introduced a quantitative requirement for liquidity buffers on 1 January 2013. In FI's opinion, it is particularly important that there are buffers in significant foreign currencies such as EUR and USD. In future, there will be international regulation targeting the more long-term structural liquidity risks in the banks' funding. FI would therefore find it desirable for Swedish banks to work with extending the funding used for illiquid assets.



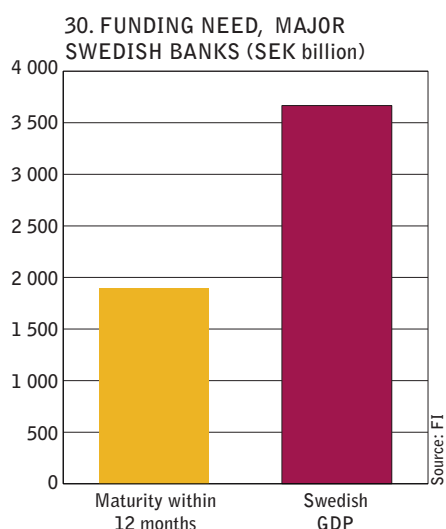
A key part of the banks' business operations consists of maturity transformation, with short-term bank deposits and long-term lending. Hence, the banks must always manage liquidity risk to a certain extent. Regulation of liquidity risks must therefore be about the degree of self-insurance for liquidity problems that should exist in the banking system.

### MARKET FUNDING OF THE MAJOR BANKS

The major Swedish banks currently have sound access to market funding, and it is clear that their high capitalisation has been an advantage. Around half of the major banks' funding consists of deposits, and the other half of market funding. The share of deposits is low in an international perspective (diagram 29).

In the coming years, the Swedish banks will need to refinance an amount equalling around half of Sweden's GDP (diagram 30). Each year, the funding of major banks that matures corresponds to more than 15 per cent of their total assets.

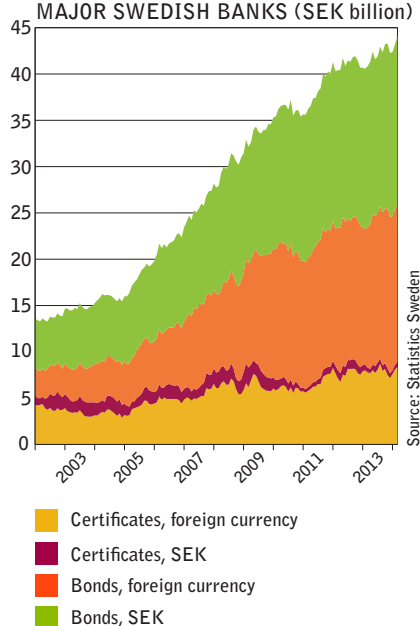
This makes the major Swedish banks sensitive to unforeseen events on financial markets. Around half of market funding is in the form of covered bonds. Half of market funding is also in foreign currency, predominantly EUR and USD. Short-term market funding, which is in the form of bank certificates to a great extent, is largely in foreign currency (diagram 31).



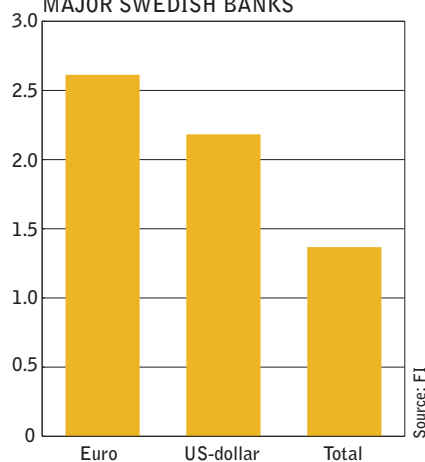
### SHORT-TERM LIQUIDITY RISKS

The ability of individual banks to meet their commitments in the short term is important to avoid the financial system suddenly ceasing to function because the banks also borrow from and trade with each other to a great extent. Before the financial crisis, this risk did not attract as much attention and some banks had a very short borrowing strategy. Liquidity problems can arise if the banks have major outflows in the near future that are not matched by inflows, and if they also have too few liquid assets at the same time. Since the financial crisis, risk awareness among the banks has increased, and measures have been taken for this type of risk. For example, the banks now hold larger liquidity reserves and have better risk management. FI's opinion is therefore that short-term liqui-

### 31. ISSUED SECURITIES, MAJOR SWEDISH BANKS (SEK billion)



### 32. LIQUIDITY COVERAGE RATIO, MAJOR SWEDISH BANKS



Note. The liquidity coverage ratio (LCR) is defined as the ratio between the bank's liquid assets and net cash flow during a 30-day period of liquidity stress. The requirement that the banks must meet is a ratio of at least 1. The data refers to the first quarter of 2014.

dity risks have decreased since the financial crisis.

The Liquidity Coverage Ratio (LCR) is a risk measure in the form of a stress test that reflects the short-term liquidity risk. LCR involves a bank having liquid assets that amount at a minimum to its net cash outflows over a 30-day period of liquidity stress, and is expressed as a ratio that must amount to a minimum of 1.

$$\frac{\text{Liquid assets}}{(\text{Outflows} - \text{inflows})} = \text{Liquidity coverage ratio}$$

FI preceded the European implementation of Basel 3 and introduced quantitative LCR requirements for the eight largest Swedish banks and credit institutions on 1 January 2013. According to the regulations, they must hold sufficient liquidity buffers in EUR, USD and at an aggregate level in order to manage a stressed situation for 30 days. Since being introduced, all eight firms covered by the regulations have met the requirements. LCR will also be phased into the rest of the EU through the Capital Requirements Regulation, CRR, through 2018. FI finds that it is important that the requirements for buffers in foreign currencies be maintained in future too. This is because the banks have a need for liquidity in these currencies, while at the same time it is more difficult for the Riksbank to provide liquidity support in foreign currency. The major Swedish banks have an average LCR of around 1.4 (diagram 32).

#### LCR in SEK

At the latest meeting of the Financial Stability Council, it was discussed whether a LCR requirement in SEK should also be introduced.<sup>40</sup> FI does not currently find that such a requirement would strengthen the banks. The existing LCR regulations presuppose that the total liquidity need of the banks is fully covered by a liquidity buffer. Because the liquidity buffers are currently higher in EUR and USD than what is needed to cover the liquidity need in those currencies, the effect is that the part of the liquidity need in SEK that is not covered by the liquidity buffer in SEK is covered by assets in primarily EUR and USD.

The mere fact of there not being a quantitative requirement for LCR in SEK does not mean that the banks have free liquidity insurance for Swedish risks, because there is a total LCR requirement. The foreign assets, particularly in EUR and USD, which partially cover the liquidity need in SEK, are low-return assets that the banks would not voluntarily hold to such an extent if there were no total liquidity coverage requirement. Data reported also shows that the liquidity reserves of the major banks in EUR and USD are generally of higher quality because they consist to a great extent of government securities and central bank assets. The buffers in SEK however largely comprise other banks' covered bonds.

An LCR requirement in SEK fundamentally involves a high probability of a reduction in the liquidity buffers in foreign currency, because the banks would then hold assets in SEK to cover outflows in that currency. The need for the banks to hold assets in SEK must then be weighed against the effects on financial stability ensuing from the banks reducing their foreign currency buffers. For a small, open economy like that of Sweden, with an internationally integrated banking sector, FI finds that large buffers in world reserve

40 <http://www.fi.se/Tillsyn/Stabilitetsrad/Listan/Protokoll-fran-Finansiella-stabilitetsradets-mote-den-23-maj-2014/>

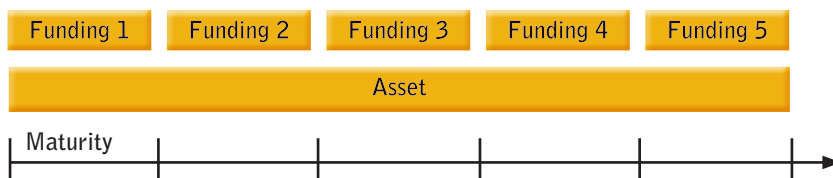


currencies are of great strategic importance to financial stability. In a situation of the Swedish banks experiencing difficulty in obtaining funding on the market, assets in USD and EUR ought to be perceived as the least risky, and hence the most liquid. It is therefore difficult to envisage that safe assets in USD or EUR would not be acceptable as collateral by the Swedish National Debt Office or the Riksbank. Access to liquid assets, in SEK, according to the definition of LCR used by FI is also limited today, so the effects on the Swedish government securities market might be hard to manage. Another potential consequence is that other countries introduce equivalent requirements in their currencies, which could ultimately lead to an inferior and more fragmented liquidity buffer.

## STRUCTURAL LIQUIDITY RISKS

It is positive for Swedish financial stability that short-term liquidity risks have decreased and that regulation has already been implemented through liquidity buffer requirements. In terms of the structural liquidity risks, the Swedish banking system faces further adaptation. One of the fundamental purposes of banking operations is to bring together private individuals and corporations with a surplus, with those with a deficit. The banks' structural liquidity risks ensue from them obtaining funding on a relatively short-term basis compared with the maturity of the assets in which they invest. This is known as maturity transformation. For example, mortgages have a very long maturity, while the average maturity for the bonds and deposits that fund the mortgages is not as long. A bank must constantly borrow new money to fund such assets, and there is thus a risk of liquidity problems arising if lenders are reluctant to renew a bank's funding at some point (figure 2).

FIGURE 2. Current funding need



A banking system that completely lacks maturity transformation is not desirable. Rather, it is a case of striking a balance in which the benefits of maturity transformation are reaped, without too much structural risk in the system.

### Forthcoming Net Stable Funding Ratio (NSFR) requirements

With a view to limiting structural liquidity risks, the Basel Committee has prepared a Net Stable Funding Ratio (NSFR) measure. NSFR is a risk measure that places the bank's stable funding in relation to the illiquid assets. NSFR categorises long-term market funding as stable funding, and also attributes a high weight to deposits. Like LCR, the measure is a ratio that must amount to a minimum of 1; that is, stable funding must be at least as large as illiquid assets.

$$\frac{\text{Stable funding}}{\text{Illiquid assets}} = \text{Net stable funding ratio}$$

The Basel Committee is currently working on devising this risk measure in its final form, and published a proposal in January 2014. FI participates in

the international development work. In that work and in the supervision of the Swedish banks, it appears that the latter do not yet meet a ratio of 1. The new Capital Requirements Regulation that entered into force on 1 January 2014 contains a requirement for quarterly reporting to FI of balance sheet items that enable calculating a Net Stable Funding Ratio. Further monitoring tools are to be introduced within the EU from 2015, whereby banks are to provide more information about their funding and balance sheet structure.

Major Swedish banks have an average maturity of around three years for their market funding, which is relatively short in an international comparison. At the same time, the actual maturity for many of the banks' assets is long, hence posing a high degree of structural liquidity risk. Although the forthcoming requirements for NSFR are being developed, Swedish banks should also be prepared for future adaptation of liquidity in the longer term. FI would therefore find it desirable for Swedish banks to work with extending the funding used for illiquid assets in order to reduce structural liquidity risk.

#### **Deposits compared with market funding**

If the point of departure is to reduce liquidity risks and strengthen financial stability, deposits are generally considered to be a stable funding source that do not expose the system to major risks. Deposits from the general public are less volatile, particularly from small corporations and households, because their deposits are often largely covered by the deposit insurance. Also, deposits differ from market funding (such as bank certificates) in that the deposits do not have to be automatically repaid on a certain date. The extent of the risk in market funding as a funding source depends on the maturity of the funding, and the diversification and depth of investor demand. Market funding has advantages. For example, creditors cannot request their money back before the debt matures, and also it is often easier to quickly borrow large volumes of capital, unlike for deposits, for which the process is often slower. Market funding can, however, be very risky if its maturity is so short in relation to the funded assets that it must be renewed at short intervals. Hence, there are both benefits and drawbacks in deposits and market funding. In general, FI is of the view that the banks should have sufficiently stable funding with well-balanced maturity transformation, and that the banks should have the possibility to borrow through many different funding sources, and have a diversified, safe investor base.

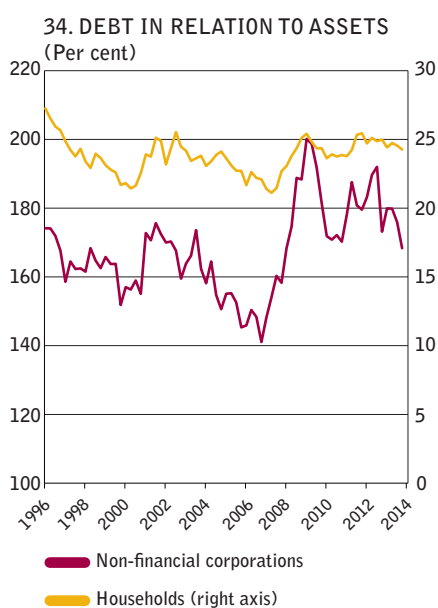
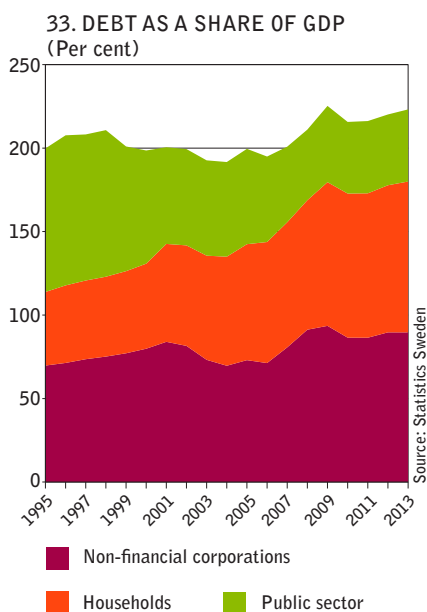
#### **Supervision of liquidity risks**

In the review and evaluation process that FI will conduct in 2014 regarding liquidity, structural liquidity risk in particular will be subject to evaluation and review.

FI is conducting a liquidity risk survey among the four major banks in 2014. Its purpose is to investigate limit management in relation to the nature and scope of the operations, and the banks' limitation of structural liquidity risk is one of the components studied in this respect.

## Indebtedness and the real economy

FI's extended responsibility for stability also includes analysing financial imbalances among corporations and households, and their consequences. The financial position of households is mainly strong, and FI's mortgage survey shows that households have sound resilience. At the same time, household indebtedness is high, which carries a macroeconomic risk. FI has implemented and announced several measures to reduce the risks, and currently finds that these measures suffice on the whole. However, FI continues to carefully follow developments, and if indebtedness increases sharply, further measures may be required. However, any new measures must be introduced carefully, and one step at a time.



Note. The diagram shows total debt in relation to total assets for households, and total debt (excluding group loans and shares) in relation to financial assets (excluding group loans and shares) for non-financial corporations.

### HOW DOES INDEBTEDNESS AFFECT FINANCIAL STABILITY AND THE REAL ECONOMY?

Since the crisis of the 1990s, Sweden has had a substantial trade surplus, which has meant that the Swedish economy as a whole has accumulated receivables from other countries. Substantial trade surpluses are an indication that Sweden runs a lower risk of being exposed to financial crises, and also entail relatively robust resilience should crises occur, and better possibilities of emerging from them faster. At the same time, aggregate debt in the non-financial sector has grown faster than GDP, which can ultimately involve risks (diagram 33).

Indebtedness is a natural phenomenon in a modern economy. It helps households and corporations to finance consumption – such as for homes and cars – and investments without building up equity themselves in advance.

High indebtedness also carries risks, both for lenders and borrowers. In an environment of low interest rates, healthy growth and an absence of shocks to the economy, asset prices and debts can quickly rise. If this course of events then turns into a sharp drop in asset prices, this can affect the stability of the financial system. The combination of financial instability and falling asset prices can put major strains on the real economy (see the box Macroeconomic effects of a drop in house prices in Sweden). It is thus important to keep an eye on the situation to ensure that risk-taking does not increase at corporations and among households, and that imbalances do not build up.

An indication of imbalances could be that borrowers' debts grow in relation to their assets. The debt ratio of households has been at a stable level of around 25 per cent in recent decades, while it has varied slightly more for non-financial corporations (diagram 34).

Although indebtedness would not pose risks of credit losses and hence to financial stability, it can nevertheless pose a risk to the real economy. This can take place through three main channels:

- Rising interest payments can decrease consumption and investments.
- Falling asset prices can reduce the possibilities of households and corporations to increase their loan-to-value ratios in order to finance consumption and investments, because collateral values have declined.

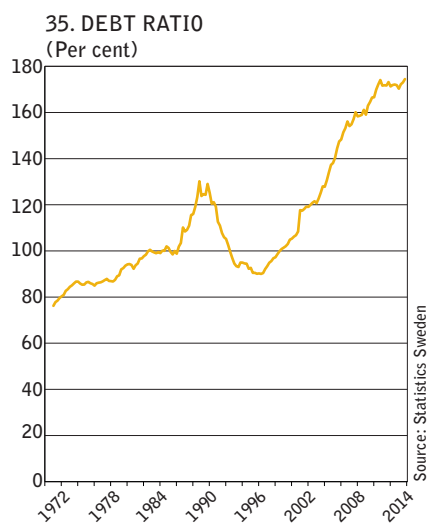
- Falling asset prices lead to a reduction in household wealth, which can in turn lead to reduced consumption with a view to restoring the ratio between liabilities and assets.

## INDEBTEDNESS IS ON THE RISE

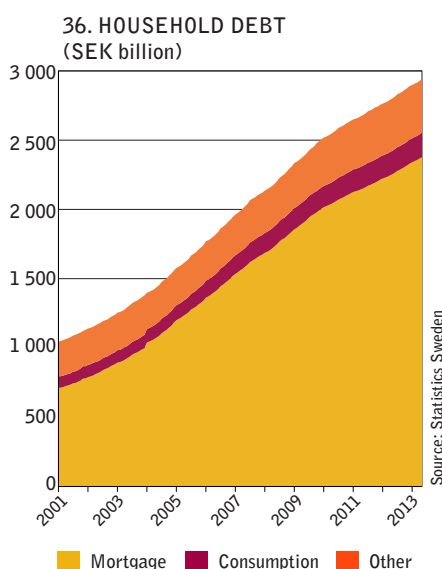
Thanks to measures<sup>41</sup> taken after the crisis of the 1990s, public sector finances have improved considerably, and, as at 2013, public debt as a share of GDP has fallen from around 90 per cent to 43 per cent. Strong public finances mean greater resources to manage financial crises, and also provide room to manoeuvre in managing cyclical fluctuations.

While the indebtedness of the public sector has decreased, at the same time the private sector – both non-financial corporations and households – has increased its indebtedness in relation to GDP (diagram 33). A combination of how the tax system is devised and rising relative risk in stock returns probably explain part of the increased indebtedness of corporations.

The debts of non-financial corporations consist of intragroup loans to a material extent. Many corporations use intragroup loans from abroad in their tax planning, which exaggerates the debt situation. If such loans are excluded from the statistics, the debts of non-financial corporations amount to 90 per cent of GDP compared with 124 per cent if intragroup loans are included. The Government has recently introduced rules that limit the ability of corporations to benefit from tax relief on interest paid on internal loans, which will probably reduce such loans. The debts of non-financial corporations are not currently thought to pose a major risk to the Swedish financial system and the Swedish economy.



Note. Household debts in relation to disposable income.



Note. Refers to household borrowings from Monetary Financial Institutions (MFI). Consumer loans can also include loans used for purchasing a home, but which are not collateralised by the home.

## HOUSEHOLD INDEBTEDNESS

In the past 20 years, household indebtedness in relation to household income has sharply increased, although the situation has stabilised in recent years (diagram 35). Swedish household indebtedness is high in both a historical and international perspective.

For most households, their home is their biggest investment. Households finance a substantial part of their home purchases with bank loans, and a new mortgage amounts on average to around 70 per cent of the value of the home.<sup>42</sup> Mortgages make up just over 80 per cent of the total debts of households to credit institutions (diagram 36). Smoothly functioning banks are thus important to households in order for the housing market to function.

In the same way, Swedish banks are dependent on the mortgages of Swedish households, which account for around 25 per cent of the total assets of the Swedish banks<sup>43</sup>, or around 45 per cent of their lending in Sweden. This makes the Swedish banks sensitive to the housing market trend. There are hence clear links between the housing market and the banks, entailing that a negative shock, for the banks or on the housing market, would risk spreading to other parts of the economy.

41 For example, an expenditure cap for government expenditure, a requirement that municipalities balance their budgets and a surplus target of 1 per cent of GDP for the public sector.

42 The Swedish Mortgage Market 2014, Finansinspektionen.

43 Refers to monetary financial institutions (MFI).

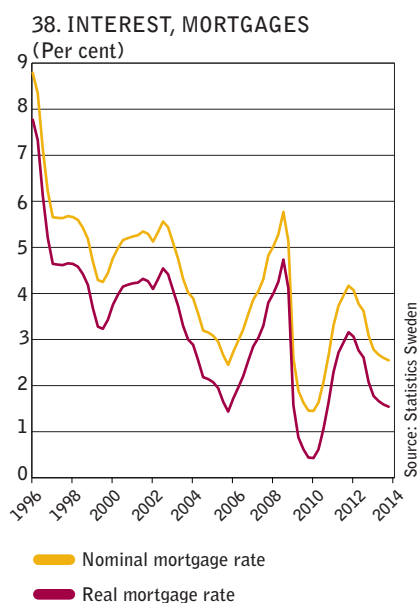
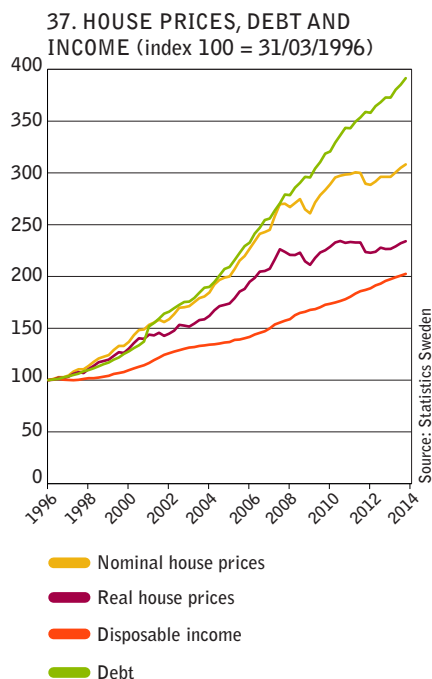
### Household indebtedness has increased

In real terms, house prices in Sweden have more than doubled since the mid-1990s. Nominal house prices have on average increased by around 6 per cent annually, while the disposable income of households has increased just over 4 per cent annually (diagram 37). House prices that rise faster than the disposable income of households contribute to the need for households to take on higher loans in relation to their income in order to purchase a given home.

It is difficult to draw conclusions about the risks in household indebtedness from looking at the debt ratio level alone. Countries with similar debt ratios can have major underlying structural differences that affect the risk profile. Furthermore, many studies suggest that it is not only the level itself of the debt ratio that is the most crucial in terms of the risks in household indebtedness, at least not for risks linked to households curbing their consumption. Instead, the rate of increase of the debt ratio in the years immediately preceding a crisis seems to be more relevant to the build-up of risk.<sup>44</sup> This is probably because rapidly rising indebtedness combined with rising house prices might be a sign that households are utilising the extended borrowing capacity afforded by higher house prices for taking out new loans for consumption purposes.

Another reason as to why a high debt ratio need not entail major risks is if indebtedness is governed by sluggish structural factors. In such a case, indebtedness is not driven by irrational or rapidly changing factors, which reduces the risk of rapid, major changes. An analysis conducted by FI indicates that structural factors can explain a large part of the upturn in household indebtedness in relation to their income from the mid-1990s.<sup>45</sup> This analysis indicates that the most important reason for the rising debt ratio is that the share of households that own their own home has increased by around 20 per cent, because construction of new rental apartments is low and rental apartments have been converted into tenant-owned apartments. Low interest rates, both nominal and real (diagram 38) and changed taxation on housing have also contributed substantially to the debt increase. Changes in access to credit, such as a rise in unamortised borrowing, might also have contributed to increased debt, because it makes indebtedness appear cheaper.

The fact that only a small part of the increase in debt is unexplained, while at the same time many of the most important drivers behind the debt increase are probably sluggish, reduces the risk of volatility that can lead to financial instability. However, it should be pointed out that interest rates can change quickly, which is an uncertainty factor. In addition, changes to housing taxation should be implemented cautiously because they can have substantial effects on the housing market relatively quickly.

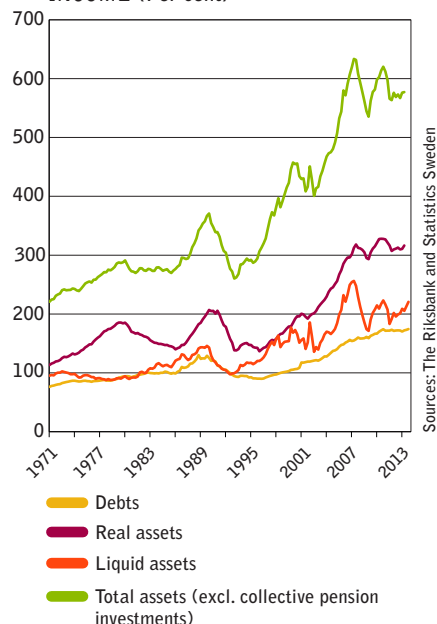


Note. Refers to the three-month rate of mortgage institutions for new agreements, before tax relief on interest. Real values are deflated by CPIF.

<sup>44</sup> See e.g. Flodén, M (2014), Did Household Debt Matter in the Great Recession or IMF, World Economic Outlook April 2012.

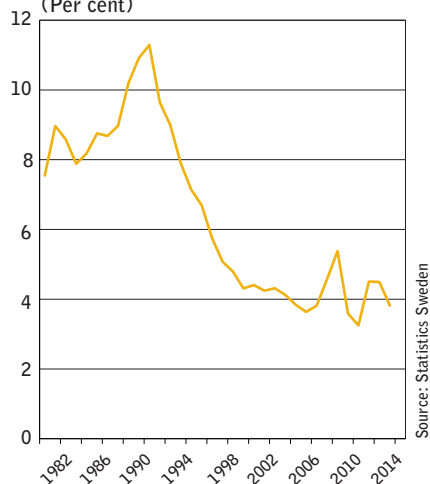
<sup>45</sup> See S, Hansen (2013), Explanations for the development in the households' debt since the mid-1990s, The analysis group's memorandums on household indebtedness, Memorandum 1, Finansinspektionen and S. Hansen (2013) Households' debt ratio in Sweden from an international perspective, The analysis group's memorandums on household indebtedness, Memorandum 8, Finansinspektionen. <http://www.fi.se/Tillsyn/Stabilitetsrad/Listan/Protokoll-fran-Samverkansradet-for-makrotillsyn/>

39. HOUSEHOLDS' ASSETS AND DEBTS AS SHARES OF DISPOSABLE INCOME (Per cent)



Note. As a share of disposable income. Liquid assets correspond to households' financial assets excluding insurance assets. Besides real and liquid assets total assets consist of private insurance assets. Real assets consist of single family dwellings, tenant-owner apartments and holiday homes.

40. INTEREST RATE RATIOS (Per cent)



Note: Households' interest expense as a share of disposable income.

The balance sheet of households is strong, and interest expense is low. At the same time as households have increased their debts, they have accumulated assets at an even higher rate, which has led to a substantial rise in the net wealth of households.<sup>46</sup> This build-up has occurred in both financial and real assets, with homes being an important component (diagram 39). Even disregarding the part of household wealth that is tied into homes and pension investments, and only looking at their liquid assets, wealth is higher than debt. Hence, the overall balance sheet of households looks strong.

Because of low interest rates, interest expense as a share of households' income has fallen substantially since the beginning of the 1990s (diagram 40). Since 1996, it has decreased by around 2 percentage points, despite home ownership and hence the number of indebted households having risen. Also, the overall housing expenses of households in relation to income have fallen, and are around 4 percentage points lower today than in 1996 (diagram 41).

As the economy improves, it is reasonable to expect interest rates and interest expense to rise in a few years' time.<sup>47</sup> However, it is hard to judge how fast and by how much. The Riksbank estimates that the mortgage rate should be in the range of 5.2–6.5 per cent in the long term.<sup>48</sup> Many international organisations believe, however, that global real rates – which steer Swedish long-term real rate levels to a great extent – will remain very low for many years ahead.<sup>49</sup> This could indicate mortgage rates being, in a few years' time, in line with the level of around 4.5 per cent observed during the period from 1996 until the 2008 financial crisis. Adding to this, the increased capital requirements for the banks' mortgages discussed in the section Stricter capital requirements introduced for Swedish banks might push mortgage rates up further.

If mortgage rates were to increase to 5–6.5 per cent in a few years' time, the current aggregate debt ratio of just over 170 per cent means that the aggregate interest rate ratio for households would amount to 9–11 per cent before tax relief and hence be higher than the average of the past 20 years (diagram 40).<sup>50</sup> Total housing costs in relation to disposable income would however probably still be lower than the levels of 1996.<sup>51</sup>

#### The risk of a substantial drop in house prices seems limited

House prices have increased rapidly in Sweden in recent decades, and are closely interlinked with household indebtedness. A key question is therefore whether current prices are justified, and what the risks are of a sharp

46 In the discussion about the debts and assets of households, for the sake of simplicity we disregard assets in the form of human capital. In simplified terms, human capital can be described as the present value of a person's future income from employment. If human capital is included, the balance sheet of households is even stronger.

47 See also the report of the National Institute of Economic Research (2013), Are households borrowing too much? Article in the report The state of the economy ("Konjunkturläget") June 2013.

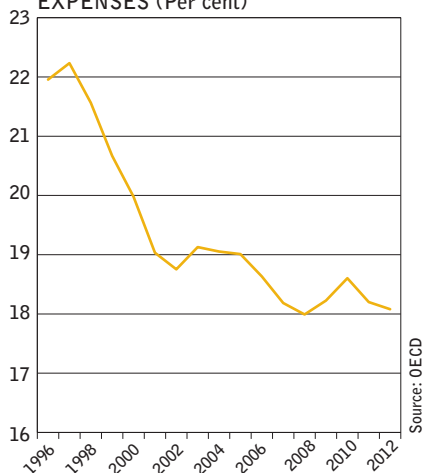
48 The interval is based on a long-term mortgage rate of 5.2–6.5 per cent based on a repo rate of 3.5–4.5 per cent and a mortgage rate spread (the difference between the mortgage rate and the repo rate) of 1.7–2 per cent. See The Riksbank (2013), Financial stability 2013:2.

49 See e.g. IMF (2014), World Economic Outlook April 2014.

50 This equates to 6 to 8 per cent after tax relief.

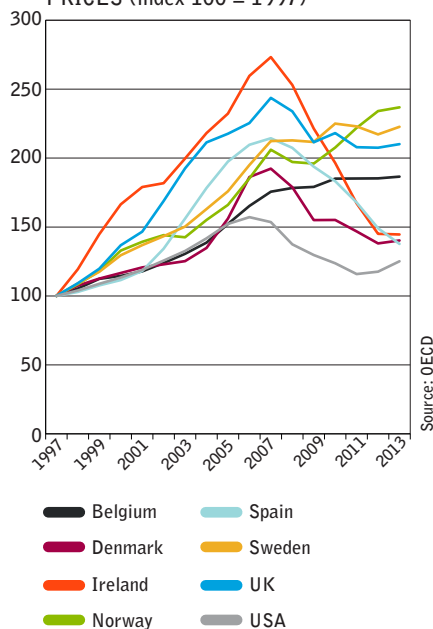
51 This ensues from diagram 41 and the expected increase in interest expense.

#### 41. HOUSEHOLDS' HOUSING EXPENSES (Per cent)



Note. The diagram shows total home-related expenditure in relation to disposable income. Housing expenses include rent, owner's equivalent rent (i.e. the cost that the owner of a home would pay in rent if he/she had not owned the home), maintenance and operating costs.

#### 42. INTERNATIONAL REAL HOUSE PRICES (index 100 = 1997)



drop in prices ahead. There are many ways of tackling the question, and the conclusions of the studies that focus on the Swedish housing market are ambiguous.<sup>52</sup> Like many of the countries that saw their house prices take a nosedive in the latest financial crisis, Swedish house prices have increased rapidly in real terms since the mid-1990s (diagram 42). Like Belgium and Norway, and unlike e.g. Spain, Ireland and Denmark, the Swedish housing market has not undergone any extensive correction with declining prices.

A simple way of estimating whether homes are overvalued is to look at the housing cost of a newly purchased tenant-owned apartment in relation to what it would cost to rent the equivalent apartment. However, such analyses have little relevance for Sweden because the Swedish rental market is regulated. However, using certain assumptions that take account of the conditions in Sweden, this type of analysis has been performed and does not show any clear signs over overvaluation.<sup>53</sup>

There are also several studies that look at house prices based on fundamental driving forces. The conclusions of these analyses too are ambiguous in terms of whether homes are overvalued. Most of them show, however, that changes in a number of fundamental factors since the mid-1990s have added to rising house prices, and hence increased indebtedness too. Factors such as the share of households that own their home, low real interest rates, abolished property tax, urbanisation in combination with a poorly functioning rental market, a low construction level, higher disposable income and a rise in unamortised borrowing seem to have contributed to the price increase.

Unlike in Sweden, the price increase in many other European countries, in which house prices subsequently fell in connection with the crisis, cannot be explained by similar fundamental changes.<sup>54</sup> The fact that there is a lack of clear indications of Swedish homes being overvalued is however no guarantee that prices will not drop. Changeable factors, such as the expectations of households, could bring prices down.

#### New mortgage holders have sound resilience too

Aggregate data suggests that the household sector as a whole is in a sound position to withstand substantial shocks. Because circumstances vary to a great extent between households, a large number of households might however be sensitive to financial shocks despite aggregate data painting a confidence-instilling picture. Such sensitivity entails major risks for these households, and potentially also for financial stability and the economy. A potential risk group is households that take out new mortgages. New mortgage holders are not only first-time buyers, but

52 See e.g. Birch Sørensen, P (2013), The Swedish housing market: Trends and risks, Report for the Swedish Fiscal Policy Council 2013/5, Evidens (2013), Housing bubble? – Analysis of the arguments for and against Sweden having a housing bubble and Englund, P (2011), Swedish house prices in an international perspective and Claussen et al (2011), A macroeconomic analysis of house prices in Sweden, in the Riksbank's commission of inquiry into risks on the Swedish housing market.

53 See e.g. Flam, H (2012) "Is there a price bubble on the housing market?", blog entry on Ekonomistas 14/01/2014 and Birch Sørensen, P (2013), "The Swedish Housing Market: Trends and risks", Report for the Swedish Fiscal Policy Council 2013/5.

54 See Hansen, S (2013), Households' debt ratio in Sweden from an international perspective in The analysis group's memorandums on household indebtedness, Memorandum 8, Finansinspektionen.

also those who switch banks or take out further loans or renegotiate their existing loan. FI therefore follows this group particularly carefully in its annual mortgage survey.<sup>55</sup>

For households with new mortgages, the aggregate debt ratio amounted to around 380 per cent in 2013. Looking at all households with mortgages, the ratio was around 280 per cent. The debt ratio has been relatively stable in recent years, as also shown by analyses of the Riksbank's collected mortgage stock data.<sup>56</sup> Households with new mortgages are hence more indebted than mortgaged households generally, which shows that household indebtedness decreases over time after being granted a new loan. On the whole, households with mortgages are much more heavily indebted than the Swedish household sector as a whole, for which the debt ratio is just over 170 per cent. This is entirely natural, because not all households have debts, and a mortgage is by far the largest part of household debt.

In order to assess household resilience to negative shocks, detailed data is needed about household-specific factors such as the number of children or type of home. In the annual mortgage survey, FI gathers such a sample and tests the sensitivity of households to various negative scenarios in the form of rising interest rates, loss of income due to unemployment and a drop in house prices.<sup>57</sup> Stress tests show that household resilience to both interest rate increases and losses of income is generally sound. On average, households with new mortgages have discretionary income of just over 40 per cent of their monthly income at the time of being granted the loan, after all necessary costs are paid.<sup>58</sup> After a rate hike of 5 percentage points, the corresponding figure is just shy of 30 per cent. Although higher interest rates can involve major adaptations for individual households, FI's data suggests that the resilience of households to higher interest expense is generally sound.<sup>59</sup>

#### **The risks to financial stability are limited...**

Because of the sound resilience of households, the risk of the banks incurring major credit losses on their mortgage lending appears low. Historically, the credit losses of the Swedish banks on mortgages have also

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55 The results of the mortgage survey are described in the annual report *The Swedish mortgage market* <http://www.fi.se/Folder-EN/Startpage/Supervision/Other-reports/Listan/The-Swedish-Mortgage-Market-2014/>

56 *The Swedish mortgage market 2014*, FI, and Winstrand, J & Ölcer, D (2014), *How indebted are Swedish households?* Economic commentary, the Riksbank. Disposable income in FI's survey refers to figures reported to FI from participating banks, while income in the Riksbank's analysis is taxed income from the Swedish Tax Agency, and tax-free contributions are hence not included.

57 For more information, see *The Swedish mortgage market, 2012, 2013, 2014*.

58 "Necessary costs" refers to the banks' average standardised costs of housing and living, and interest expense. See FI's 2014 Mortgage survey for a more detailed description. An assumption that households follow the recommendation of the Swedish Bankers' Association regarding amortisation down to a loan-to-value ratio of 70 per cent over 15 years does not materially affect the results.

59 In order to understand in more detail the risks in the debts of mortgage holders, data about the breakdown of household wealth would be desirable, so that balance sheets could be assessed at household level. However, no such data for Swedish households has been available in the past few years. There is a lot to suggest that wealth is concentrated to high-income earners, just like the highest debts, and that the indebted households with the highest debts ought therefore generally to have financial buffers for managing negative shocks (See e.g. the Riksbank, *Financial Stability 2009:1*).



been low. In the Swedish crisis at the beginning of the 1990s, the household sector only accounted for around 6 per cent of the total credit losses of the banks.<sup>60</sup> The risks of financial shocks that affect households giving rise to major financial problems and stability risks for the banks hence appear to be low.

One risk to financial stability is that a sharp drop in house prices could lead to excessive expectations of credit losses based on scenarios from other countries, which could lead to funding problems for the banks. The banks obtain funding using covered bonds, and buyers include foreign investors. Such investors proved flighty in the latest financial crisis.<sup>61</sup> If confidence in the Swedish mortgage market were to deteriorate, there is a risk of investors in covered bonds reducing their demand, and of the banks hence experiencing funding problems.<sup>62</sup> Such risks are best managed by the Swedish banks having sufficient capital, healthy liquidity, high quality in lending, and that supervision is transparent and based on conservative stress tests. On the whole, FI believes that systemic risks to the banking system from household indebtedness are currently limited.

#### **...but the effects on the real economy of a drop in house prices could be substantial**

Although house prices in Sweden are not evidently overvalued, there are always risks of a drop in prices. Such drops can easily turn out to be major because the expectations of households – which are an important component of price formation – can quickly change.

High indebtedness linked to mortgages increases the vulnerability of households to such shocks, and hence increases the risks of a drop in house prices having substantial repercussions in the Swedish economy. Lower house prices weaken household balance sheets, because the value of the assets decreases while debts are unchanged. Households thus feel poorer and consume less, while at the same time their ability to remortgage the home for consumption purposes decreases. The negative effect on consumption is seemingly higher the more a household is mortgaged.<sup>63</sup> As discussed in the box Macroeconomic effects of a drop in house prices in Sweden, the National Institute on Economic Research finds that a drop in house prices of 20 per cent can entail a downturn in household consumption of 1.8 percentage points and an upturn in unemployment of 1.4 percentage points.

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60 Financial market report 1/1998, the Riksbank.

61 In the second half of 2007, when stress on financial markets increased, foreign investors reduced their holdings of covered bonds from 450 billion to 330 billion. See also Sandström, Forsman, Stenkula von Rosen and Wettergren (2013). The Swedish covered bond market and links to financial stability. Economic Review 2013:2. The Riksbank.

62 See L, Marklund (2014), Consequences of an increased loan-to-value ratio for the funding of mortgages with covered bonds, The analysis group's memorandums on household indebtedness, Memorandum 7, the Riksbank.

63 See Andersen et al (2014) and Dynan (2012). These effects will be particularly serious if the general price level in the economy falls, because the real debt burden increases in a debt deflation spiral similar to that in Japan after the financial crisis of the 1980s.

### Macroeconomic effects of a drop in house prices in Sweden

In order to better understand the consequences of falling house prices for the real economy, FI commissioned the National Institute of Economic Research (NIER) to assess this, with a focus on the effects on household consumption and unemployment in Sweden.

NIER's empirical analysis shows that if house prices fall 20 per cent in a year, and subsequently recover, household consumption is expected to drop by a maximum of 1.8 percentage points compared with if the price drop had not occurred. The recovery in consumption is slow, and it takes more than four years for household consumption to return to the original level. Unemployment rises by a maximum of 1.4 percentage points, and then falls back towards the original level. The effect on unemployment is greater and the recovery somewhat slower in situations – like the current one – in which the Riksbank's room for manoeuvre is assumed to be limited by the fact that the policy rate will not be cut to lower than 0.25 per cent.

An alternative scenario is that the drop in house prices is more protracted, which was the case in Sweden in the crisis of the 1990s. If it is assumed that house prices fall over 20 per cent in a year, and are subsequently unchanged for three years, this has more lasting effects on consumption. Then, household consumption falls by a maximum of around 2.2 percentage points after four years (Table 1). Unemployment increases by a maximum of around 3.3 percentage points. Finally, the analysis shows that if a drop in house prices occurs at the same time as stress on the Swedish financial market rises, the effects on household consumption and unemployment are amplified. This applies to an even greater extent if it is a case of an international financial and real shock.

TABLE 1. Effects on consumption for four forecasts (with zero rate restriction)<sup>64</sup>

	Maximum effect on consumption, ppts	No. quarters before consumption returns to trend
Drop in house prices	1.8	18
Drop in house prices, protracted	2.2	-
Drop in house prices, domestic financial stress	2.0	20
Drop in house prices, foreign financial and real shock	2.6	17

On the whole, the analysis shows that a major drop in house prices can have substantial effects on household consumption and unemployment. Thanks to strong public finances, fiscal policy can, together with monetary policy and sound financial stability, help curb the consequences of a price drop.<sup>65</sup>

<sup>64</sup> Zero rate restriction entails that the policy rate is assumed to be 0.25 per cent at the lowest.

<sup>65</sup> The entire study is available on NIER's website, [www.konj.se](http://www.konj.se).

## MEASURES FOR SUSTAINABLE INDEBTEDNESS AMONG HOUSEHOLDS

In order to reduce the risks in household indebtedness, FI has already taken a number of measures and has recently announced that more will be taken. FI continuously monitors developments and will introduce further measures if needed.

In order to address rising house prices and increasing indebtedness, a collective approach is needed, however. FI's tools can influence credit demand and supply from and to households, but the tools that are probably most effective in the long term, and which can be expected to have the greatest impact on the housing market and loan-to-value ratios of households – such as the supply of homes and taxation – are beyond FI's area of responsibility.

Powerful measures from FI have macroeconomic implications. Because the economic recovery is still weak and inflation is low, it is therefore important that measures are adapted so that they do not counteract the needs of stabilisation policy. All else equal, this suggests caution is currently required in the application of the tools.

### Review of discretionary income calculations

In order for banks to determine the extent of the risks associated with their lending, it is important that they have a solid understanding of borrowers' repayment ability. In their credit assessments, the banks judge the repayment ability of borrowers using discretionary income calculations. The purpose of the latter is to calculate how much of a borrower's disposable income remains after interest expense, housing costs and other subsistence costs are paid. In order to ensure sound resilience for borrowers to increases in interest rates, interest expense is calculated using a much higher interest rate than the present interest rate level, known as a discretionary income interest rate.

The obligation to perform a credit assessment prior to granting loans is set out in the Consumer Credit Act (2010:1846). Credit assessment is also regulated by Finansinspektionen's general guidelines regarding consumer credit (FFFS 2011:47) and general guidelines regarding credit risk management in credit institutions and investment firms (FFFS 2004:6). The general guidelines set out that the creditor should prepare a calculation of housing costs in order to assess the borrower's repayment ability, and that the credit assessment should include a sensitivity analysis of the borrower's repayment ability. However, the guidelines do not include any details about how the sensitivity analysis should be performed.

FI's mortgage survey has shown that, even though the banks' calculations follow the same principles, there are differences in the assumptions on which the calculations are based. The survey also shows that all the banks' calculations are based on costs in line with or above the subsistence cost benchmarks of the Swedish Consumer Agency.<sup>66</sup> At the same time, FI's stress tests, which are based on similar calculations, show that households with new mortgages generally have comfortable margins in their finances, and hence sound repayment ability.<sup>67</sup> Hence, at present FI does not find lending to be

66 Subsistence costs for a household comprising two adults and two children vary between SEK 15,500 and SEK 21,900 (SEK 14,200 – SEK 21,800 the year before). This can be compared with the subsistence cost benchmarks of the Swedish Consumer Agency of SEK 15,000 for a family of two adults and two children.

67 The Swedish Mortgage Market 2014, Finansinspektionen.

imprudent, even though some banks have slightly lower standardised values in their calculations. Therefore, neither does FI see any need, through regulation, to specify details or introduce minimum levels for standardised methods used in discretionary income calculations. In order to have any meaningful effect, regulation of discretionary income calculations would probably have to be detailed and affect the entire credit assessment. Thus, such regulation would be a major intervention in the banks' credit management and risk taking over one of their main tasks. It could thus lead to standardisation, whereby all banks routinely use the assumptions prescribed by the authorities.

Supervision of the banks' credit risks is, on the other hand, clearly an important matter for FI, and is pursued by means of regular quality controls of the banks' discretionary income calculations in the annual mortgage survey. Hence, FI verifies that the calculations are based on sound assumptions.

## RECENTLY IMPLEMENTED AND FORTHCOMING MEASURES

FI has already implemented a number of measures that directly and indirectly affect household indebtedness and the housing market, and the risks they generate. The following measures have been implemented:

- 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.
- In order to ensure that the banks' internal models do not underestimate the credit risk in mortgage portfolios, and hence create misplaced incentives in lending, in 2013 FI introduced a risk weight floor for mortgages of 15 per cent. In connection with the new capital adequacy regulations that enable FI to take account of the systemic risks brought about by mortgages, FI intends to further increase the risk weight floor for mortgages from 15 to 25 per cent.<sup>68</sup>
- FI works continuously with supervising the banks' credit assessment process and, going forward, will intensify supervision of the discretionary income calculations at the basis of mortgage applications.
- New capital requirements to strengthen the banks discussed in the section Stricter capital requirements introduced for Swedish banks increase the resilience of banks in a crisis.
- FI has, in consultation with the Swedish Bankers' Association, also worked to promote offering individually tailored amortisation plans to the banks' customers when they are granted a mortgage. These are expected to be in place by the end of June, 2014.
- Activation of the countercyclical buffer is planned in September 2014 at a buffer rate of 1 per cent, applicable as of September 2015 (see the section Stricter capital requirements introduced for Swedish banks).

### Standing prepared to take further measures

FI finds that the implemented and announced measures represent a balanced approach between curbing long-term stability risks, and not increasing the risks to financial stability and the real economy in the near future due to overly rapid adaptation. At the same time, there is a high degree of uncertainty linked to the state of the economy and the extent

68 See FI's memorandum "Capital requirements for Swedish banks", 08/05/2014

to which implemented and announced measures contribute to a debt trend that is sustainable in the long term. FI will therefore carefully follow developments and take further measures if needed. Work is already under way on the mortgage survey of the autumn and gathering data from the banks. FI currently considers it to be most effective to introduce measures that affect the ability and willingness of households to assume debt (amortisation requirements, Loan-to-income or Debt-service-to-Income restrictions, or a tightening of the mortgage cap). At the same time, measures aimed at increasing the supply of homes, and also changes to taxation and tax relief would probably be more suitable in curbing the risks associated with household indebtedness. However, any new measures must be introduced carefully, and one step at a time.

## Glossary

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

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

**Central counterparty** A firm that enters as the seller for all buyers and the buyer for all sellers for the financial instruments being traded.

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

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

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

**Covered bonds** A bond whose holder has a special right of priority in the event of bankruptcy. The purpose of covered bonds is that the credit risk is normally lower than for non-covered bonds, which means a reduction in borrowing costs.

**Debt ratio** A measure of indebtedness. It is defined as the household's total debt divided by the household's annual disposable income.

**Interest rate ratio** A measure of how much of a household's income is spent on interest rate expenses. It is defined as the household's interest expenses after tax divided by the household's disposable income.

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

**LCR – Liquidity Coverage Ratio** A requirement expressed within the framework of the new Capital Requirements Regulations (CRR) requiring a bank to have sufficient liquid assets to honour its short-term obligations during a "stressed" 30-day period.

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

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

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

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

**NSFR – Net Stable Funding Ratio** A liquidity measure that places a bank's stable funding in relation to its illiquid assets in a stressed one-year scenario. The EU Commission has the ambition of submitting a NSFR proposal in 2016.

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

**Pillar 2** The capital adequacy regulations Basel 3 are divided into three pillars. Pillar 1 is the minimum capital requirements for credit risks, market risks and operational risks that are calculated using explicit calculation rules. Pillar 2 entails the supervisory authority identifying risks and assessing the risk management from a broader perspective. This can result in an increment to the capital requirements calculated under Pillar 1. Pillar 3 defines various transparency requirements.

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

**Risk weight** When the capital need of a bank is calculated, the value of each asset, for example a mortgage or corporate loan, is multiplied by a risk weight. The risk weights vary between the various assets based on how large the credit risk for each asset is judged to be. By combining the value of all of a bank's assets, weighted at the different risk weights, it is possible to produce a single value for the risk-weighted assets in the bank.

**Solvency 2** An umbrella term for the new regulations for the financial position and strength (solvency) of insurance companies being drawn up in the EU.

**Stress test** Analysis of various scenarios to test resilience to unforeseen and negative events.

**Systemic risk** The risk of key functions being seriously disrupted or completely disabled in all or parts of the financial system.



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