



# Financial Stability Report 2013:1



## The Riksbank's Financial Stability Report

The Riksbank's Financial Stability Report is published twice a year. The Report describes the Riksbank's overall assessment of the risks and threats to the financial system and of the system's resilience to them. The stability analysis is therefore an instrument that is directly linked to the Riksbank's task of promoting a safe and efficient payment system. By publishing the results of its analysis, the Riksbank wishes to draw attention to, and warn of, risks and events that might pose a threat to the financial system, and to contribute to the debate on this subject.

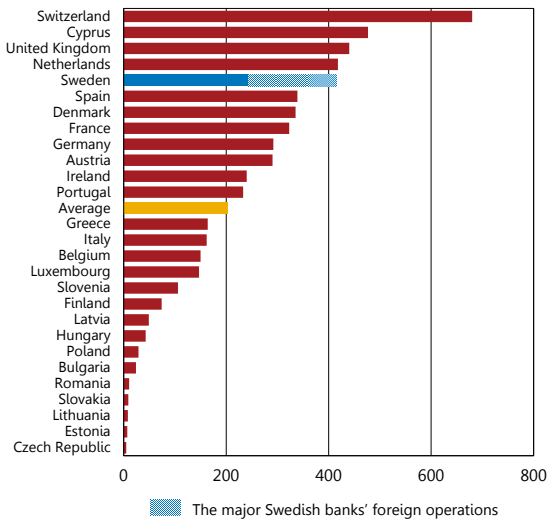
The Executive Board of the Riksbank discussed the Report on two occasions – on 7 May and 20 May 2013. The Report takes into account data available as of 20 May 2013. The report is available on Sveriges Riksbank's website, [www.riksbank.se](http://www.riksbank.se). It is also possible to order a printed version of the report free of charge on the website, or to download the report as a PDF.



## The Riksbank and financial stability

- The Riksbank has the Riksdag's (the Swedish Parliament) mandate to promote a safe and efficient payment system. Achieving this requires a stable financial system so that payments and the supply of capital function well. In practice, this task means that the Riksbank is responsible for promoting financial stability. The Riksbank defines financial stability as meaning that the financial system is able to maintain its three basic functions – the mediation of payments, the conversion of savings into funding and risk management – and is also resilient to disruptions that threaten these functions.
- The Riksbank is also the authority that is able to grant emergency liquidity assistance to individual institutions if problems arise that threaten financial stability. To be able to do this in a good way, the Riksbank needs to be well prepared for crises by having an efficient crisis organisation with good information channels and tools for analysis, as well as well-developed cooperation with other authorities.
- The Riksbank does not have the sole responsibility for promoting financial stability. It shares this responsibility with Finansinspektionen (the Swedish financial supervisory authority), the Ministry of Finance and the Swedish National Debt Office. The Ministry of Finance is responsible for the regulation of financial enterprises and Finansinspektionen is responsible for supervision. The interaction between the authorities is important both in the preventive work and in the event of crisis management. The same also applies internationally as financial enterprises increasingly operate across national borders.
- The financial system plays a vital role in the economy. It is necessary to have a stable and smoothly-running financial system for the economy to function and grow. A serious crisis in the financial system is liable to entail extensive economic and social costs.
- The financial system is sensitive. This sensitivity is due to the vulnerability of central parts of the system, such as banks and markets. Banks are vulnerable mainly because they fund their operations at short maturities but lend at longer maturities. This imbalance makes the banks dependent on the general public and the market having confidence in them. If the market participants' confidence in their counterparties or for the financial instruments traded on the market declines, trading may suddenly come to a halt. The various parts of the financial system are also closely interconnected, for instance in that financial institutions borrow from and trade with one another to such a large extent. This means that problems that arise in one institution or market can rapidly spread throughout the system. Contagion effects may also arise if there is a general fall in confidence in similar activities.
- The combination of the sensitivity of the financial system and the large potential costs of a financial crisis mean that the state has a particular interest in preventing threats to financial stability. Banks and other market participants do not have an incentive to give full consideration to the risks to financial stability to which they are contributing. This is because a large percentage of the costs of a financial crisis fall to others both within and outside of the financial system. If a crisis occurs, the government also needs to be able to manage it at the lowest possible cost.
- The Riksbank analyses the financial system's stability on a continuous basis for the early detection of changes and vulnerabilities that could lead to a crisis. The main focus of the analysis is on the Swedish banks and on the markets and infrastructure that are important for their funding and risk management.
- In some cases the Riksbank recommends specific measures to counteract risks. These recommendations may be based on the current economic situation. But they may also relate to more structural circumstances and stem from current regulatory issues. The recommendations can be aimed at banks as well as other market participants, or at legislators and other authorities.

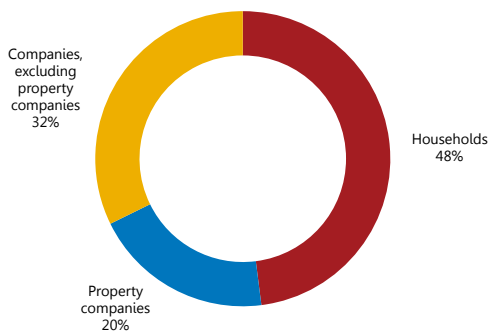
**Chart 1. The banks' assets in relation to GDP**  
December 2011, per cent



Note: In banking assets are included all of the assets of the national banking groups, that is both foreign and domestic assets. The shadowed part of the blue bar shows the four major banks' assets abroad in relation to Sweden's GDP.

Sources: ECB, the European Commission, the Swiss National Bank and the Riksbank

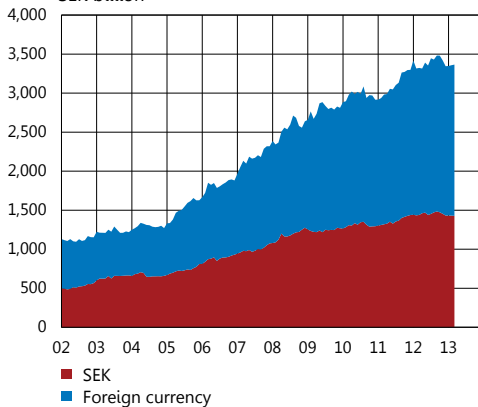
**Chart 2. Lending of the major Swedish banks by borrower category**  
March 2013



Note: Including interbank lending and excluding repos.

Sources: Bank reports and the Riksbank

**Chart 3. The major banks' market funding via Swedish parent companies and subsidiaries**  
SEK billion



Sources: Statistics Sweden and the Riksbank

## The Swedish banking system

- The Riksbank's analysis in the Financial Stability Report focuses on developments at the four major banks, Handelsbanken, Nordea, SEB and Swedbank, as these banks play an important role in the Swedish financial system by mediating payments, converting savings into lending and managing risks.<sup>1,2</sup>
- The four major banks dominate the Swedish banking market and together have a market share of approximately 70 per cent of both deposits and lending in Sweden. Together with the other Swedish banks, the total assets of the four major banks in Sweden and abroad are four times the size of Sweden's GDP. Sweden thus has a large banking sector in relation to the national economy, which is partly due to the fact that a substantial part of the banks' operations are conducted abroad (see Chart 1 and Table 1).

**Table 1. Geographical distribution of the major Swedish banks' lending**

March 2013, per cent

	Handelsbanken	Nordea	SEB	Swedbank	Total
Sweden	66	27	73	87	54
The other Nordic countries	22	70	4	3	36
The Baltic countries	0	2	9	10	4
Other countries	11	3	15	0	7

Sources: Bank reports and the Riksbank

- Over half of the assets of the major banks consist of lending to the public. The banks' borrowers are therefore an important component of the assessment of risks in the financial system. The Riksbank studies the large groups of borrowers particularly closely (see Chart 2) and monitors developments on markets of significance to borrowing, such as the commercial property market and the Swedish housing market.
- The financial markets also constitute an important part of the Riksbank's analysis as they play a crucial role in the banks' funding and risk management. The Swedish banks have a relatively large element of market funding – approximately half of the banks' lending is funded in this way.

<sup>1</sup> The term the major Swedish banks refers hereinafter to Handelsbanken's, Nordea's, SEB's and Swedbank's banking groups, including both domestic and foreign operations.

<sup>2</sup> For more information on the Riksbank's other work with financial stability, see *The Riksbank and Financial Stability*, 2013, and *The Financial Infrastructure*, 2013.

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## ■ Summary

**The earnings of the major Swedish banks have increased and their loan losses have been small, which has contributed to that the banks have good access to wholesale funding and are relatively well capitalised. The Riksbank's assessment is therefore that the banks are still financially strong. Economic development in the euro area poses the greatest risk to financial stability in Sweden, but the high level of indebtedness of the Swedish households may also constitute a risk. The major banks are highly resilient to a weaker economic climate in the short term, but there are several structural vulnerabilities in the Swedish banking system that may have a negative impact on financial stability in the longer term. The Riksbank therefore recommends the major banks to continue to ensure they have adequate capital and liquidity and that they improve their public liquidity reporting. The Riksbank also recommends that the framework for the Stibor reference rate should be supplemented with a requirement for independent follow-up and control.**

### **The major Swedish banks are financially strong at present**

The earnings of the major Swedish banks (Handelsbanken, Nordea, SEB and Swedbank) have benefited from the relatively good economic situation in Sweden. This has also helped to keep loan losses low. The major banks are also relatively well capitalised compared to many other European banks. As a result, they have good access to wholesale funding in both Swedish krona and foreign currencies. The Riksbank's assessment is therefore that the major Swedish banks are financially strong at present. However, it is expected that the Swedish economy will continue to be affected by weak economic development in the euro area. This means that growth in Sweden, as well as the Swedish companies' demand for loans, will be weak this year. Despite this, the major banks' profits before loan losses are expected to increase in the period 2013-2015 in the Riksbank's main scenario.

### **Economic development in the euro area constitutes the largest risk to financial stability in Sweden.**

The economic situation in the euro area may seriously deteriorate if the structural problems that still exist in several euro-area countries are not dealt with. A long recession in the euro area accompanied by unease on the financial markets may lead to the Swedish economy being affected much more than expected in the Riksbank's main scenario. In this event, there is a risk that the loan losses of the major Swedish banks would increase and their earnings decrease, at the same time as they would find it more difficult to fund their operations on the financial markets. Swedish housing prices may also fall if Sweden is hit by a long economic slowdown. This could lead to Swedish households reducing their consumption. If, in such a situation, other sectors of the economy are unable to compensate for the downturn in household consumption, there is a risk that a low level of activity in the economy would cause companies to downsize their business because of lower demand. This, in turn, could lead to loan losses for the banks. However, the Riksbank's stress tests indicate that the major banks are highly resilient to increased loan losses.

### **The major banks should continue to ensure they have adequate capital and liquidity**

Although the major Swedish banks are financially strong at present, there are vulnerabilities in the structure of the Swedish banking system that may have a negative effect on financial stability in the long term. For example, the banking system is large in relation to the Swedish GDP and problems in one bank can rapidly spread to other banks as the system is strongly interconnected. The size of the banking system in Sweden means that a financial crisis could demand government involvement and that it would be costly to the taxpayers. The Riksbank therefore recommends that the major banks should continue to reduce their structural liquidity risks and ensure that they have enough capital to cope with potential future losses and disruptions on the financial markets. The Riksbank also recommends that the major banks should improve their public liquidity reporting. The Riksbank also notes that the framework for the Stibor reference rate has been reformed in accordance with the recommendation in the previous Financial Stability Report, with the exception of a requirement for independent follow-up and inspection. The Riksbank therefore recommends that such a requirement should be added to the Stibor framework.



# 1. Stability assessment and recommendations

**Developments in the euro area are still marked by the economic crisis and major challenges and risks remain. Support measures from the ECB and other authorities have certainly created scope for reform work, which has contributed to improving the situation on the financial markets. But unease may swiftly increase due to the uncertain development of the real economy. Despite the weak economic development in Europe, the major Swedish banks are expected to have strong earnings and low loan losses in the Riksbank's main scenario. In addition, the Riksbank's stress tests show that the Swedish banks have strong resilience against increased loan losses. However, if Swedish house prices were to fall substantially, households may choose to reduce their consumption, which would adversely affect growth as well as macroeconomic and financial stability. In light of the current stability assessment and the structural vulnerabilities of the Swedish banking system, the Riksbank recommends the major banks to ensure that they have sufficient capital and liquidity and that they improve their public liquidity reporting. In addition, the Riksbank recommends that the framework of the Stibor reference rate be complemented by independent follow-up and control.**

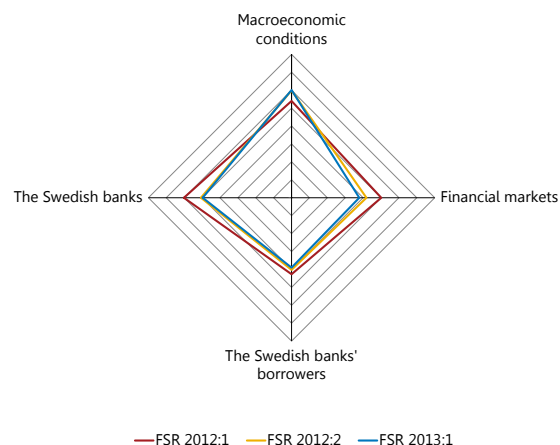
## The Riksbank's assessment of stability

DEVELOPMENTS ON FINANCIAL MARKETS HAVE BEEN POSITIVE DESPITE REMAINING STRUCTURAL PROBLEMS IN THE EURO AREA

The economic recovery of the euro area is proceeding slowly and developments in several countries are marked by weak economic growth and high unemployment. In addition, credit growth is low and lending rates are high in the countries with sovereign debt problems (Greece, Ireland, Italy, Portugal and Spain) despite the European Central Bank's (ECB) strong measures. A long-lasting economic recovery in Europe assumes that several structural problems are rectified. Among other measures, several European countries need to improve their competitiveness and consolidate their public finances. This applies not only to the countries with the greatest sovereign debt problems, but also to core countries such as France, for example. In addition, banks in several countries need to strengthen their capital adequacy to function normally and regain the market's confidence.

Although the challenges to the real economies in the euro area remain, the most acute unease on the financial markets has dampened (see Chart 1:1). The support measures of the ECB and other authorities have contributed to lower funding costs for both governments and banks, thereby creating scope for necessary reform work. The support measures have also contributed to reducing the risk that the European rescue funds may turn out to be insufficient. This reduced unease and a long period of low interest rates has led to increasing demand among investors for high-risk assets. Among other consequences, this has led to rising share prices in both Europe and the United States, as well as low risk premiums and low volatility on most financial markets. This picture is confirmed by the European stress index, which shows that financial stress has fallen (see Chart 1:2).

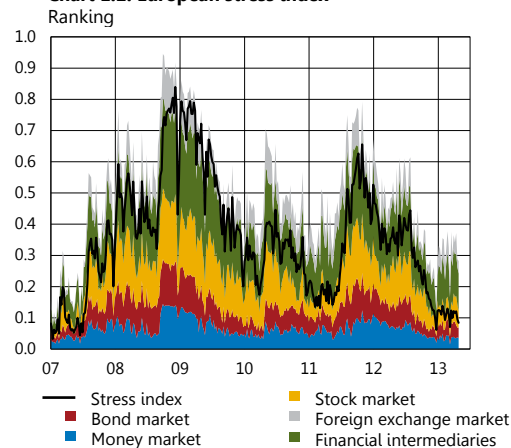
Chart 1:1. Stability web



Note. The higher values, at the edge of the chart, reflect greater instability or higher systemic risk. See Jönsson, Kristian and Leung Caroline, Cobweb charts as a toll for summarizing the stability assessment, *Economic commentary* no 5, 2012. Sveriges Riksbank.

Source: The Riksbank

Chart 1:2. European stress index



Note. The European stress index was produced by the ECB and has been published in the ESRB's Dashboard and other sources. The stress level at a specific date is expressed as a value between zero and one, in which one signifies a historically high stress level and zero signifies a historically low stress level. See Kremer et al, CISS - A composite indicators of systemic stress in the financial system, *Working Paper Series nr 1426*, Mars 2012, ECB.

Source: ECB

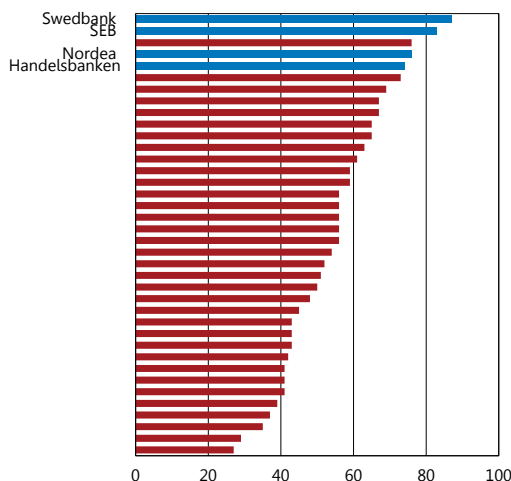
**Chart 1:3. Systemic risk indicator for the Swedish financial system**



Note. The indicator shows the probability of all four major banks becoming distressed. See A systemic risk indicator for the Swedish banking system, article in the *Financial Stability Report 2011:2*, Sveriges Riksbank.

Source: The Riksbank

**Chart 1:4. Transparency index for liquidity reporting, European banks**  
March 2013



Note. The transparency index specifies the quality and scope of the banks' public reporting of liquidity risks. The higher the level, the higher the quality and scope. The chart shows the Swedish banks (blue bars) and a sample of international banks (red bars).

Source: Liquidatum

## AT PRESENT, THE MAJOR SWEDISH BANKS ARE FINANCIALLY STRONG, BUT MORE RESILIENCE IS NEEDED IN THE LONG RUN

The Riksbank considers that the major Swedish banks are financially strong at present and that the risk that they will become distressed in the near future has decreased (see Chart 1:3). Among other reasons, this can be explained by the fact that economic development is and has been stronger in Sweden than in many other European countries. The Swedish banks' earnings have thereby benefited from relatively strong demand for credit, primarily from households. The relatively favourable economic conditions have also contributed to the banks' loan losses being small.

As the major Swedish banks largely obtain funding on the international capital markets, confidence in them is decisive for their access to funding. The recent strong earnings and low loan losses have helped the major banks to maintain good access to wholesale funding, even on markets that have periodically been unavailable to other European banks. One important factor that has contributed to maintaining the market's confidence is the transparency of the banks in terms of the risks they take. Among other effects, this has led the Riksbank to recommend the major Swedish banks to report their liquidity risks more clearly. This has contributed to making the major banks among the most transparent banks in Europe in terms of liquidity reporting (see Chart 1:4).

In an international comparison, the Swedish banks are also in a good position regarding the liquidity measure, Liquidity Coverage Ratio (LCR) (see Chart 1:5).<sup>3</sup> The high LCR levels can partly be explained by the advantageous funding situation in which the central banks' extraordinary measures have increased access to liquidity. This has made it both easy and inexpensive for the major Swedish banks to build up liquidity buffers by issuing bank certificates in foreign currencies and then depositing the money in central banks.

The structural liquidity risks of the major Swedish banks are still high. This is shown by the Riksbank's structural liquidity measure, which has many similarities with the Net Stable Funding Ratio (NSFR). Even if comparable measures show that the major banks have reduced their structural liquidity risks over a longer period of time, the Riksbank considers that they should reduce these risks further (see the Riksbank's recommendations). In addition, the Riksbank also recommends that the major banks should improve their public liquidity reporting.

Many of the deficiencies that the Riksbank identified in the autumn in the framework surrounding the Stibor reference rate have now been rectified, which inspires confidence.<sup>4</sup> What remains is to complement the framework with a requirement for independent

<sup>3</sup> The LCR measures a bank's ability to manage a net outflow of liquidity in a stressed scenario covering 30 days. In January 2013, Finansinspektionen introduced the LCR as a binding requirement, based on the Basel Committee's definition in *Basel III: International framework for liquidity risk measurement, standards and monitoring*, December 2010, Bank for International Settlements.

<sup>4</sup> Stibor is a Swedish reference rate that forms the basis for the pricing of many financial contracts and is thus important to the stability of the financial system in Sweden.

follow-up and control. In this context, the Riksbank also notes that Stibor is being used as a reference rate in the pricing of financial contracts by more banks than participate in the Stibor panel. Also, more banks than the Stibor banks link financial contracts to Stibor in their risk management. This suggests that more market players should have an interest in participating in the Stibor panel. With more banks in the Stibor panel, the legitimacy and credibility of the reference rate may further increase, according to the Riksbank.

In line with the Riksbank's recommendation, the major Swedish banks have also continually increased their core Tier 1 ratios and are well-capitalised compared with many other European banks, according to risk-adjusted measures of capital (see Chart 1:5 and Chart 1:6). However, compared to many other European banks, the low risk weights mean that equity only represents a small part of the total assets of the Swedish banks (see Chart 1:5 and Chart 1:7). This highlights the importance of measuring and regulating the banks' capital with the help of several different measures.

**DESPITE UNCERTAIN DEVELOPMENT ABROAD, THE RIKSBANK'S MAIN SCENARIO EXPECTS THE MAJOR SWEDISH BANKS TO REPORT STRONG RESULTS**

In the Riksbank's main scenario for the real economy 2013–2015, the euro area continues to be characterised by weak development.<sup>5</sup> Growth is mainly being hampered by developments in southern Europe. Several years of debt consolidation work in both the public and private sectors of a number of euro area countries will also be necessary, which will hold back GDP growth during the entire forecast period. This means that growth in the Swedish economy, like Swedish companies' demand for credit, is initially expected to be relatively weak (see Table 1:1).

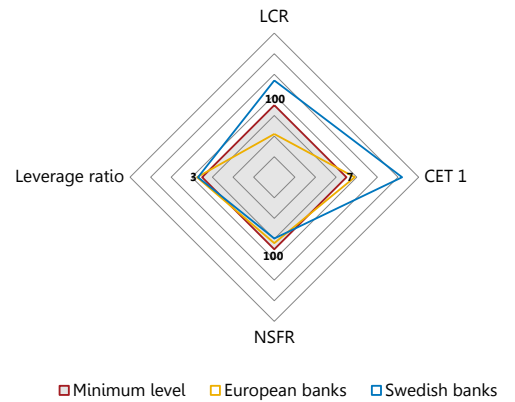
**Table 1:1. GDP in the Riksbank's main scenario**

Annual percentage change	2013	2014	2015
Sweden	1.4	2.9	3.2
Nordic countries excluding Sweden	0.5	1.5	1.7
Baltic countries	4.0	3.5	3.7
Other countries	0.4	1.2	1.6

Note. Other countries refer to Germany and the United Kingdom.  
Sources: The IMF and the Riksbank.

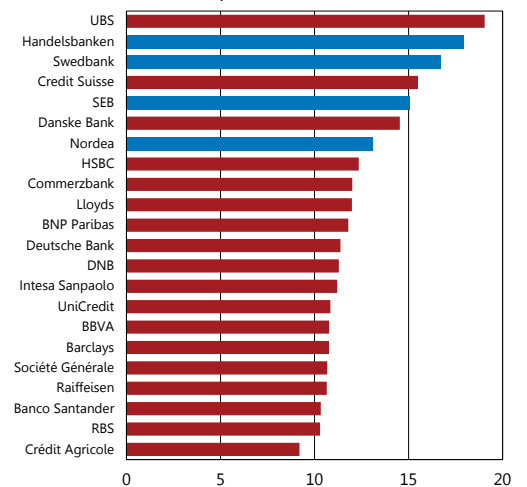
The main scenario expects the major Swedish banks' lending on the group level as a whole to increase by about three per cent per year over the next three years. This assumption implies that the banks' lending portfolio will grow at the same pace as the general growth in lending in the countries in which they are active. In particular, lending to households in the Nordic countries is expected to increase due to

**Chart 1:5. The four Basel III measures**  
June 2012, per cent



Note. The LCR refers to December 2011 and is based on the Basel Committee's definition from 2010. The minimum level of the CET 1 (Common Equity Tier 1) ratio corresponds to the Basel III Accord's minimum requirement and capital conservation buffer requirement. The leverage ratio for Swedish banks is calculated as the banks' CET 1 in relation to total assets including off-balance sheet assets. For the Swedish banks, the NSFR is replaced with the Riksbank's structural liquidity measure.  
Sources: EBA and the Riksbank

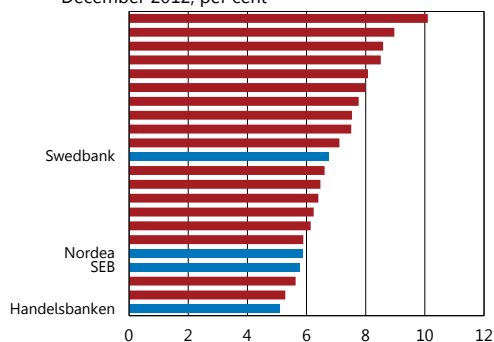
**Chart 1:6. Core Tier 1 ratio according to Basel II**  
December 2012, per cent



Sources: SNL Financial and the Riksbank

<sup>5</sup> The main scenario is based on the macroeconomic forecasts acting as a basis for the assessments in the *Monetary Policy Update*, April 2013, Sveriges Riksbank.

**Chart 1:7. Equity in relation to total assets**  
December 2012, per cent

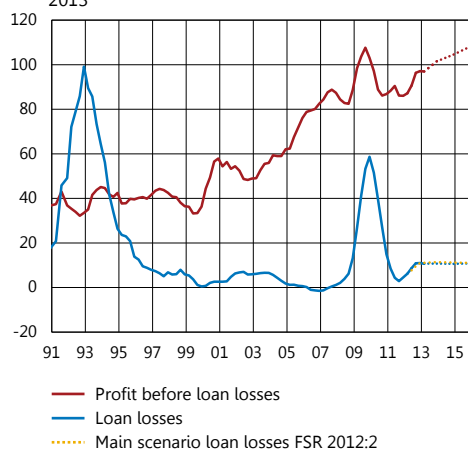


Note. The measure specifies the capital of the Swedish banks (blue bars) and of a sample of European banks (red bars) in relation to their total assets, with reductions for reverse repos, derivatives and insurance assets. The measure should not be confused with the Basel Committee's leverage ratio.

Source: Liquidatum

**Chart 1:8. Profit before loan losses and loan losses in the major Swedish banks, according to the main scenario**

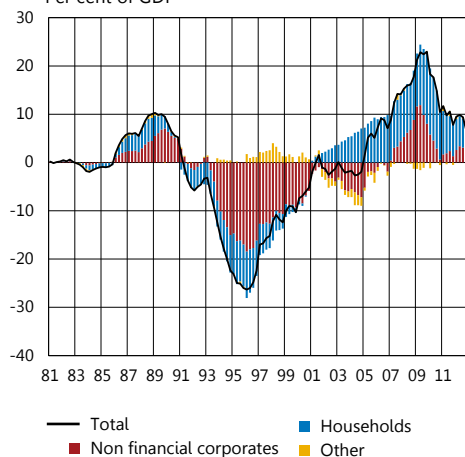
Rolling four quarters, SEK billion, fixed prices, March 2013



Note. The broken lines refer to the Riksbank's main scenario in the current assessment and the assessment from the previous Financial Stability Report.

Sources: Bank reports and the Riksbank

**Chart 1:9. The credit gap for Sweden**  
Per cent of GDP



Note. The credit gap shows how much indebtedness in the economy deviates from the estimated long-term trend. The trend value has been estimated using a Hodrick-Prescott filter.

Sources: Statistics Sweden and the Riksbank

rising growth in the economy 2014–2015 and continued low interest rates.

The major banks' profits before loan losses are also expected to increase over the forecast period. Alongside the constantly increasing lending, the increased earnings are due to the fact that the banks' costs are not increasing to the same extent as their incomes. In addition, the banks' loan losses are expected to be small over the forecast period, even if the level of loan losses in Denmark continues to be relatively high (see Chart 1:8).

## HOUSEHOLD INDEBTEDNESS IS INCREASING FROM AN ALREADY HIGH LEVEL

Swedish households' indebtedness is high from both a historical and an international perspective. Households in Sweden are more indebted than households in many of the countries that have experienced economic problems in recent years as a result of price falls on the housing market (see Chart 1:9 and Chart 1:10).<sup>6</sup>

The rapid increase in Swedish house prices since the middle of the 1990s can probably largely be explained by the strong development of households' disposable incomes, the low number of newly-built homes and falling interest rates.<sup>7</sup> The Swedish housing market undoubtedly lacks several of the characteristics that contributed towards the housing crises in countries such as Ireland, Denmark and the United States. Among other factors, the level of construction of new housing in Sweden is very low and households normally purchase housing to live in, rather than for purposes of speculation or investment. In Sweden, private individuals also have a considerable legal responsibility to make interest and amortisation payments on their loans, which means that bankruptcy is not a viable option to shake off debts. Even so, the high level of indebtedness is a risk.

After having dampened somewhat in 2012, both house prices and the growth of household indebtedness in Sweden have again increased, which is probably due to lower mortgage rates and the easing of the acute unease on the financial markets. Households have thereby become more optimistic. As house prices and household debt are already at high levels, further increases of house prices and household indebtedness risk mutually reinforcing each other.<sup>8</sup> Although the Swedish authorities have adopted measures to reduce the risk of such a development - for example, a mortgage cap has been introduced and increased risk weights have been proposed for

<sup>6</sup> The credit gap is a simple indicator that shows how much indebtedness in the economy deviates from the estimated long-term trend. It has proved itself a useful indicator for the prediction of financial problems as a positive credit gap signals increased risk in the financial system. The Riksbank's analysis shows that the credit gap might close in the years ahead, which, if anything, is due to the adjustment of the mechanically-calculated trend to recent years' high credit growth.

<sup>7</sup> Englund, Peter (2011), Swedish house prices in an international perspective. In the *Riksbank's commission of inquiry into risks on the Swedish housing market*, Sveriges Riksbank.

<sup>8</sup> Economic studies show that upward movements in credit aggregates and property prices can easily become permanent when rising property prices and increasing indebtedness mutually reinforce each other. See Borio, Claudio, The financial cycle and macroeconomics: What have we learnt? *BIS Working Papers 395*, Bank for International Settlements.

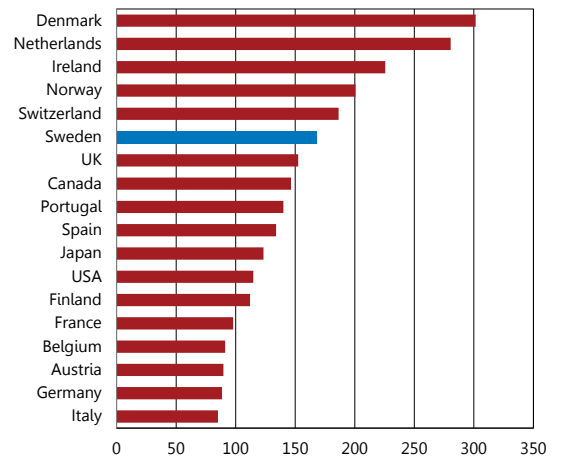
mortgages. In addition, the government has charged Finansinspektionen with investigating the possibility of individualised amortisation plans. Moreover, the Swedish Bankers' Association has issued principles to the banks to the effect that mortgages exceeding 75 per cent of the value of a home should be amortised. However, the effects of these measures are uncertain and possibly insufficient, particularly in light of the low interest rates. Consequently, further measures may be required to curb the building-up of risks further.<sup>9</sup> In its annual report, the Fiscal Policy Council also highlights imbalances on the housing market and the need to take a consolidated approach to housing policy.<sup>10</sup>

A sudden and substantial fall on housing prices could weaken households' economies and lead to a longer period of lower economic activity in which parts of the household sector reduce their consumption to compensate for the decline in worth of their real assets. This is what has happened in for example Denmark, where households have chosen to save instead of consume with the aim of restoring the balance between assets and liabilities (see Chapter 3). It is true that the Swedish household sector's total assets considerably exceed its total liabilities. But these assets are unevenly spread among households and, in addition, largely illiquid, which means that it may be difficult for individual households to rapidly sell the assets if it becomes necessary to reduce their debts. If other sectors in the economy do not have the capacity to increase their consumption or their investments to counterbalance households' lower consumption, the low level of activity in the economy could make it more difficult for companies to pay their current expenses such as interest on loans. This, in turn, could cause substantial loan losses for the banks.<sup>11</sup>

In addition, a sudden and substantial fall in housing prices could lead to investors choosing to reduce their exposures to the Swedish banking sector. This may reduce demand for the banks' covered bonds and make other funding more expensive, which would impair the Swedish banks' possibilities for obtaining wholesale funding and could further fuel the negative development.

**Chart 1:10. Household debt**

December 2011, percentage of disposable income



Note. Data regarding Japan, Canada and Switzerland is from 2010.

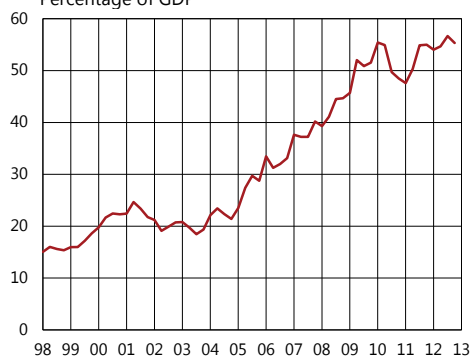
Source: OECD

<sup>9</sup> See also Monetary Policy Update, April 2013, Sveriges Riksbank.

<sup>10</sup> Report of the Fiscal Policy Council 2013, Fiscal Policy Council.

<sup>11</sup> According to the Riksbank's risk survey, the actors on the Swedish financial markets still take a serious view of the possible consequences of high indebtedness among Swedish households. The negative consequences for the financial system if households were to have problems repaying their loans are assessed as substantial. However, the probability of this happening is at the same time considered to be relatively low. *Market participants' views on risks and the functioning of the Swedish fixed-income and foreign exchange markets spring 2013*, Sveriges Riksbank.

**Chart 1:11. Swedish bank's wholesale funding in foreign currency**  
Percentage of GDP



Note. Refers to Swedish monetary financial institutions (MFIs), meaning that Swedish banks' foreign subsidiaries are not included. Foreign wholesale funding has been adjusted by the portion to be swapped into Swedish krona.

Sources: Statistics Sweden and the Riksbank

## ECONOMIC DEVELOPMENTS IN THE EURO AREA ARE THE GREATEST RISK

Several euro area countries are still characterised by major structural problems. This applies not only to the countries with sovereign debt problems in the euro area but also to some of the core countries. If these problems are not rectified, the euro area will risk entering a sustained recession that could also have a negative impact on the Swedish economy. Furthermore, previous events, such as the parliamentary uncertainty in Italy and the banking crisis in Cyprus, have demonstrated that unease on the financial markets can rapidly increase. A substantial increase in financial stress combined with deterioration in the development of the real economy could lead to lower earnings in the major Swedish banks and greater loan losses. The major banks may then also encounter difficulties in obtaining access to wholesale funding, which could have severe consequences, as the size of their foreign funding makes them particularly dependent on the international financial markets (see Chart 1:11).

Despite the weak economic prospects abroad, financial stress on several markets has returned to the same levels as prior to the crisis. One reason for this is the expansionary monetary policy measures adopted by central banks to support the economic recovery and promote financial stability. However, the historically low interest rates have led to a decrease in the future yield on low-risk assets, leading investors to take more risks than previously to achieve yield (see Chapter 2). While a moderate increase of risk-taking by investors can be seen as a desirable effect of an expansionary monetary policy, this kind of development can spill over into unsustainably high risk-taking.<sup>12</sup>

## STRESS TESTS SHOW THAT THE SWEDISH BANKS HAVE STRONG RESILIENCE TO MAJOR LOAN LOSSES

The Riksbank has carried out a stress test where the banks' loan losses increase substantially in comparison with the main scenario (see Appendix: Stress test of the banks' capital ratios). The stress scenario should be seen as a possible development of the macro economy given that one or more of the risks identified have been realised. In the stress scenario for the period 2013–2015, GDP falls substantially. In addition, unemployment increases at the same time as house prices fall by 20 per cent both in Sweden and in other countries in which the Swedish banks have exposures. All in all, the development of the stress scenario indicates an increase in the major Swedish banks' total loan losses in 2013–2015 to SEK 267 billion, which can be compared with SEK 33 billion in the main scenario. The largest loan losses in the stress test come from Swedish non-financial companies and from lending in the Baltic countries. These loan losses

<sup>12</sup> Johansson, Tor, Search for yield in a low-interest rate environment, *Economic Commentary* no. 4, 2013. Sveriges Riksbank.



lead to a decrease in the major banks' CET 1 (Common Equity Tier 1) ratios, but the banks remain relatively well capitalised. One important reason for this is that the banks still show strong earnings.

Even if the loan losses in the stress test do not lead to any great weakening of the major banks' CET 1 ratios, the stressed scenario may still entail problems for the banks. For example, the stress test does not take account of contagion risks in the Swedish banking system. The risks in the banking system as a whole may thus be greater than the results for the individual banks suggest. In addition, the stress scenario may have a greater effect on the banks' access to wholesale funding. One of the implications of the stress test's results is an increase in credit risk in loan portfolios, meaning that the major banks' credit ratings risk being lowered. This may, in turn, limit the number of investors willing to invest in securities issued by the banks.

## The Riksbank's recommendations

Even if the major Swedish banks are financially strong at present, there are vulnerabilities in the structure of the Swedish banking system that may have a negative effect on financial stability in the long term. For example, Sweden's banking system is very large and problems in one bank can rapidly spread to other banks as the banking system is strongly interconnected. The Swedish banking system's size in relation to the Swedish economy also means that a financial crisis may be costly for taxpayers. In light of the current stability assessment and the structural circumstances in the Swedish banking system, the Riksbank presents recommendations concerning the major banks' capital levels and liquidity risks (see Table 1:2). The Riksbank also recommends that the major banks should improve their public liquidity reporting. The Riksbank also presents a recommendation concerning the framework of the Stibor reference rate.

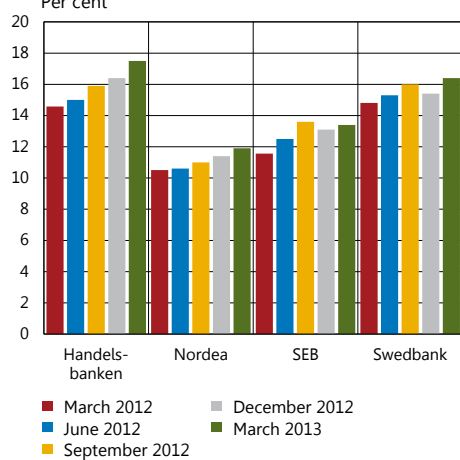
**Table 1:2. The Riksbank's current recommendations**

<b>Current recommendations</b>	<b>Introduced</b>
The major Swedish banks should ensure that they have a CET 1 capital ratio of at least 12 per cent on 1 January 2015.	Financial Stability Report 2012:1
The major Swedish banks should continue to reduce their structural liquidity risks and approach the minimum level of 100 per cent in the Net Stable Funding Ratio (NSFR).	Financial Stability Report 2011:2
The major Swedish banks should report their Net Stable Funding Ratios (NSFR) at least once a quarter.	Financial Stability Report 2013:1
The framework of the Stibor reference rate should be complemented with a requirement for independent follow-up and control.	Financial Stability Report 2012:2

### THE RIKSBANK'S RECOMMENDATION ON THE MAJOR BANKS' CAPITAL

The banks need to have enough capital to be able to manage any future losses. More capital will reduce the probability of a bank suffering a crisis. In addition, this kind of resilience contributes

**Chart 1:12. CET 1 ratios according to Basel III**  
Per cent



Note. The CET 1 ratios are stated according to the Riksbank's own calculations in accordance with the Basel III Accord. On 1 January 2013, the revised accounting standard IAS 19 "Compensation to employees" were implemented. The revision primarily refers to defined pension plans and entails the reporting of accumulated actuarial gains and losses directly against equity, which may have effects on reported CET 1 ratios.

Sources: Bank reports and the Riksbank

towards a bank gaining the confidence of the public and the market that is decisive for the bank's access to funding. Compared with the average for European banks, the Swedish banks have higher CET 1 ratios, which exceed the minimum level of Basel III, which is seven per cent. At the same time, the Riksbank, the Ministry of Finance and Finansinspektionen have assessed that a CET 1 ratio requirement of twelve per cent should be imposed on the major Swedish banks as of 2015.<sup>13</sup>

*Recommendation:*

**The major Swedish banks should ensure that they have a CET 1 capital ratio of at least 12 per cent on 1 January 2015.**

At present, three out of four major banks already have CET 1 ratios above twelve per cent (see Chart 1:12). In addition, all major banks had CET 1 ratios above ten per cent on 1 January of this year, as the Riksbank has previously recommended.

Work is currently underway in the Ministry of Finance to develop regulations to impose new capital adequacy requirements on the major banks to reach the new level of twelve per cent. These regulations will also incorporate relevant parts of the EU's upcoming Capital Requirements Regulation and Directive (CRR/CRD IV), including the directive's guidelines for capital adequacy buffers aimed at managing systemic risks in the banking sector.<sup>14</sup> The Riksbank considers it important that the major banks ensure that they can meet the recommended capital levels regardless of when the requirements are later incorporated into law.

The Riksbank's recommendation refers to CET 1 ratios calculated without the floor for the capital requirement included in the transitional regulations to Basel II. This means that, through the use of new internal risk-weighting models for the calculation of risk-weighted assets, the banks could improve CET 1 ratios, with the same balance sheets, that is without changing assets or equity. The Riksbank considers that the extent of such a procedure should also continue to be limited by some form of floor requirements similar to the rules applied at present; at least until a leverage ratio requirement has been introduced.

<sup>13</sup> In November 2011, the Riksbank, Finansinspektionen and the Ministry of Finance agreed that new capital adequacy requirements should be introduced for the major Swedish banks. For further details on the proposal, see the following press releases: "New capital requirements for Swedish banks", Sveriges Riksbank (25 November 2011); "New capital requirements for Swedish banks", Finansinspektionen (25 November 2011); and "Proposal on higher capital adequacy requirements to reduce vulnerability of the Swedish economy", Ministry of Finance (25 November 2011).

<sup>14</sup> Documents 7746/13 and 7747/13 of the Council of the European Union.

## THE RIKSBANK'S RECOMMENDATION REGARDING THE MAJOR BANKS' LIQUIDITY RISKS

The difference in maturity between assets and liabilities makes the major Swedish banks sensitive to shocks on the financial markets. It is therefore important that the major banks increase their capacity to manage longer periods of stress and other more permanent changes that might affect their funding channels.

### *Recommendation:*

**The major Swedish banks should continue to reduce their structural liquidity risks and approach the minimum level of 100 per cent in the Net Stable Funding Ratio (NSFR).<sup>15</sup>**

The maturity mismatch between the assets and the liabilities of the major Swedish banks remains large, implying that structural liquidity risks are considerable. To reduce their structural liquidity risks, and thereby improving their NSFR, the banks need to reduce the maturity mismatch between assets and liabilities, for example by increasing the maturity of their funding.

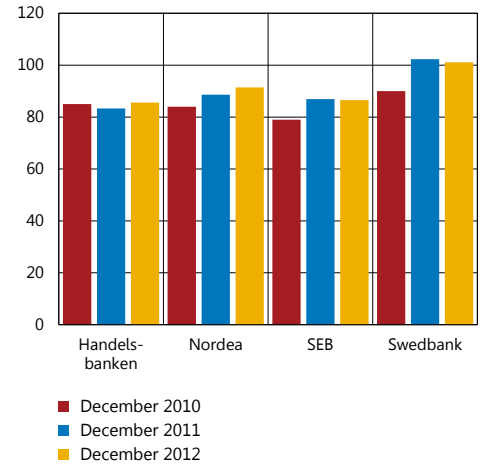
The average structural liquidity risks of the major banks have improved only marginally over time (see Chart 1:13). They have remained largely unchanged in 2012, which is remarkable given that the conditions for reducing structural liquidity risks have been favourable. Some of the Swedish banks may therefore find it difficult to meet the Basel Committee's NSFR requirement of at least 100 per cent by 2018, unless they reduce their structural liquidity risks at a faster rate than they have so far. Earlier this year, the Basel Committee also announced that it will resume the work on calibrating the NSFR.

### *Recommendation:*

**The major Swedish banks should report their Net Stable Funding Ratios (NSFR) at least once a quarter.**

The NSFR is a measure of structural liquidity risk that is based on the difference between the maturities of a bank's assets and liabilities. The NSFR thereby provides valuable and comparable information on a bank's resilience to long periods of stress and other more permanent changes that may affect the bank's funding opportunities. At present, only Swedbank publishes its NSFR. The Riksbank therefore believes that the major banks should improve their public reporting by publishing their NSFRs each quarter in line with the definition of the measure in the Basel III Accord of December 2010 (see Table 1:3).

**Chart 1:13. The Riksbank's structural liquidity measure**  
Per cent



Note. For a detailed description of the Riksbank's structural liquidity measure, see Method for stress tests of the banks liquidity risks. Box in *Financial Stability Report 2010:2*. Sveriges Riksbank.

Sources: Liquidatum and the Riksbank

<sup>15</sup> The recommendation is based on the Basel Committee's definition, see *Basel III: International framework for liquidity risk measurement, standards and monitoring*, December 2010, Bank for International Settlements.

**Table 1:3. Public reporting of NSFR**

Report NSFR at least once a quarter	Handelsbanken	Nordea	SEB	Swedbank
Financial Stability Report 2013:1	●	●	●	●

● Minimum level observed

● Partly observed

● Not observed

### THE RIKSBANK'S RECOMMENDATION ON THE STIBOR REFERENCE RATE

In its review last year, the Riksbank identified a number of deficiencies in the framework surrounding Stibor (the Stockholm Interbank Offered Rate), which is a collective term for a number of reference rates in Swedish krona. As these reference rates are of great importance to Swedish interest rates and thereby for the allocation of capital in society and the functioning of the financial markets, the Riksbank recommended that the framework for Stibor be reformed. This reform work would include establishing clear responsibility for Stibor, clear governance and control and better transparency, as well as the possibility of verification and an obligation for the banks to conduct transactions at their stated bids on request.

Since the previous *Financial Stability Report* was published in November 2012, the banks included in the Stibor panel<sup>16</sup> and the Swedish Bankers' Association have made great progress in the reform work (see Table 1:4). On 4 March 2013, the Swedish Bankers' Association took official responsibility for the Stibor framework, at the same time as a new framework for Stibor was published. The new framework for Stibor establishes an organisational structure for the Swedish Bankers' Association as regards decision making and case management for Stibor, including clear conditions for participants in the Stibor panel. Furthermore, the framework places requirements on the Stibor banks' internal governance and control. The Swedish Bankers' Association also introduced binding commitments for the Stibor banks to trade at their stated Stibor rates on request, which distinguishes Stibor from international reference rates, at the same time as the size of the trading units and the number of maturities for Stibor was reduced. In addition, the new framework strengthens the possibilities for verifying Stibor, among other means by requiring the banks to state indicative rates for bank certificates. The framework and other important information is now available on the websites of the Swedish Bankers' Association and Nasdaq OMX, which means increased transparency. The Swedish Bankers' Association's new











<sup>16</sup> The five banks included in the Stibor panel are Danske Bank, Handelsbanken, Nordea, SEB and Swedbank.




Stibor framework therefore complies with large portions of the Riksbank's recommendation. At the same time, the Riksbank considers that Stibor's legitimacy and credibility could increase further if more banks were to participate in the Stibor panel.

The framework only fails to comply with the Riksbank's recommendation in one area. The framework of the Stibor reference rate should be complemented with a requirement for independent follow-up and control. As a result of this, the Riksbank recommends in this report that the Stibor framework be complemented in this regard.

The Riksbank intends to carry out a new review of Stibor in 2014 to follow up the reform work and to assess how the new framework for Stibor is functioning.

**Table 1:4. Follow-up of the recommendation for the Stibor framework**

Parts of the Stibor recommendation	Responsibility for Stibor	Clear governance and control	Transparency	Possibility of verification	Obligation for the banks to conduct transactions in accordance with their stated bids
	Q1 2013 [Q3 2012]	Q1 2013 [Q3 2012]	Q1 2013 [Q3 2012]	Q1 2013 [Q3 2012]	Q1 2013 [Q3 2012]
Compliance	 	 	 	 	 

-  Minimum level observed
-  Partly observed
-  Not observed

*Recommendation:*

**The framework of the Stibor reference rate should be complemented with a requirement for independent follow-up and control.**

To ensure confidence in Stibor, it is essential that there be a clear structure for following up and overseeing compliance with the framework. In addition, the Riksbank considers that the follow-up should include an independent review. An independent review, for example in the form of an audit performed by a registered public accounting firm, would form an important complement to the Riksbank's oversight and Finansinspektionen's supervision.

## RECOMMENDATIONS FULFILLED BY THE MAJOR BANKS

Since the autumn of 2010, the Riksbank has made recommendations in its *Financial Stability Report*. The major banks comply with a number of these recommendations, which are consequently not repeated in this report (see Table 1:5).

**Table 1:5. Recommendations that have been fulfilled**

<b>Fulfilled recommendations</b>	<b>Introduced</b>
The major Swedish banks should improve the transparency of their public reporting as regards information and the degree of asset encumbrance.	Financial Stability Report 2012:2
The major Swedish banks should report comparable key ratios in the form of the subcomponents of the Liquidity Coverage Ratio (LCR).	Financial Stability Report 2011:2
The major Swedish banks' Liquidity Coverage Ratios (LCR) should amount to at least 100 per cent.	Financial Stability Report 2011:2
The major Swedish banks' Liquidity Coverage Ratios (LCR) should amount to at least 100 per cent in euro and US dollar respectively.	Financial Stability Report 2011:2
The major Swedish banks should report their Liquidity Coverage Ratio (LCR) at least once a quarter beginning no later than the interim reports published after 1 July 2012.	Financial Stability Report 2011:1
The major Swedish banks should improve the transparency of their public reporting by reporting maturity information per asset and liability type, broken down per currency.	Financial Stability Report 2011:1

# How is a capital ratio measured?

**How much capital banks are obliged to retain in relation to their assets is highly important to the banking system's resilience to financial stress. The banks' capital levels are often presented in terms of various capital ratios under the framework of the Basel I, II and III Accords. This article presents a brief account of how these agreements affect the major Swedish banks' capital ratios, as well as how the Swedish banks' capital ratios compare to the capital ratios of a group of European banks.**

Basel I is one of the first international standards specifying the minimum amount of capital a bank must have in relation to its assets, and was published in 1988. This standard was eventually developed into Basel II, which takes greater consideration of the risk with which a bank's different assets are encumbered when the lowest permitted capital level is calculated. Basel II was published in its first form in 2004. In light of the latest financial crisis, these regulations were revised into what is now known as Basel III, which, according to plan, is to be completely implemented no later than 2019. Within the framework of Basel III, the requirements for which type of capital may be included in the calculations of the lowest permitted capital level have been tightened compared to previous standards.

## *Different regulations give different risk-weighted assets*

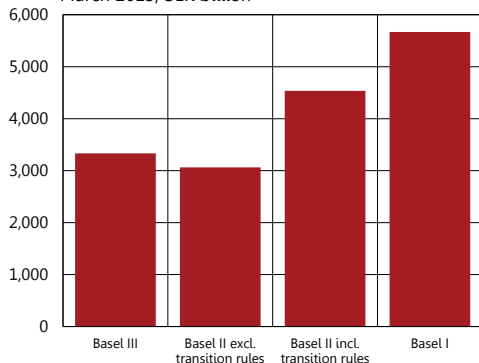
A key concept for the understanding of a bank's lowest permitted capital level under all Basel Accords is that bank's *risk-weighted assets*. These are calculated in a relatively complicated manner, but somewhat simplified, it could be said that the smaller the losses a bank is deemed to make in a highly-stressed scenario, the lower its risk-weighted assets will be.

However, the Basel Accords mentioned above stipulate different ways of calculating risk-weighted assets. The value of the risk-weighted assets generally depends on the regulations under which they were calculated. Under Basel I, there were few possibilities for a bank to affect the value of its risk-weighted assets. Under Basel II and Basel III, the banks can use an internal rating based method (IRB method) in parts of their calculations. Using the IRB method gives the banks themselves the possibility to decide the size of the risk-weighted assets by basing the calculation on models in which the risk-weighted assets are calculated based on historical data on losses. All major Swedish banks currently use the IRB method to a great extent.

For reasons of prudence, transitional regulations were introduced in connection with the changeover from Basel I to Basel II. The exact contents of these are relatively complicated, but the major Swedish banks illustrate the effects of the transitional regulations by reporting the value of their risk-weighted assets both with and without consideration of them. However, the original idea was that these transitional regulations would be phased out after a while.

**Chart B1:1. The major Swedish banks' risk-weighted assets**

March 2013, SEK billion

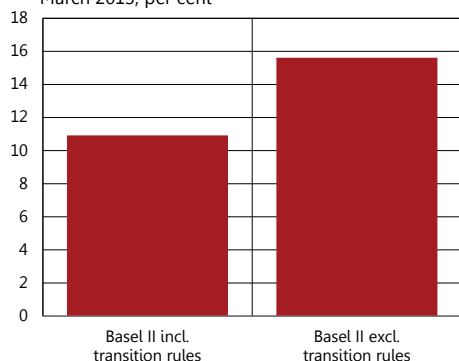


Note. The bar "Basel I" shows the Riksbank's estimate of the major banks' risk-weighted assets within the framework of Basel I. The bar designated "Basel II (with transitional regulations)" shows the major banks' illustration of the effects of the transitional regulations.

Sources: Bank reports and the Riksbank

**Chart B1:2. The major Swedish banks' Tier 1 capital ratio**

March 2013, per cent



Note. The bar "Basel II (with transitional regulations)" shows the major banks' illustration of the effects of the transitional regulations. Both bars show a weighted average of the major Swedish banks Tier 1 capital ratios.

Source: Bank reports and the Riksbank

Consequently, the focus has largely been on risk-weighted assets calculated without consideration of the transitional regulations. Chart B1:1 shows the total value of the major Swedish banks' risk-weighted assets calculated under the framework of the regulations described above.

### *Different types of capital and capital requirements under different regulations*

The banking system's capital level affects the financial system's resilience to financial stress. A minimum permitted level for a bank's *capital base* is therefore specified by the different Basel Accords. Even if the precise definition of the term capital base differs between the different accords, they specify that a bank's capital base is not to fall below eight per cent of its risk-weighted assets.

The capital base is divided into several types of capital. One important component is Tier 1 capital, which can absorb possible losses arising in a bank's operations. The part of Tier 1 capital with the greatest capacity to absorb losses is known as core Tier 1 capital. The requirements for how much core Tier 1 capital a bank must retain have been tightened in Basel III, compared with earlier regulations. When Basel III is fully applied, a bank must have CET 1 not less than seven per cent<sup>17</sup> of its risk-weighted assets if it is to be able to freely decide whether profits are to be returned to its shareholders.<sup>18</sup> This is a significant difference to Basel II, which has no corresponding rule. To ensure that a bank's Tier 1 capital is not held at an excessively low level, regardless of the value of its risk-weighted assets, the Basel Committee is preparing a proposal suggesting that a bank's Tier 1 capital in relation to its total non-risk weighted assets (leverage ratio) is not to fall below three per cent.

### *Different capital ratios under different regulatory frameworks with and without transitional regulations*

The *Tier 1 capital ratio* is a bank's Tier 1 capital in relation to its risk-weighted assets. As previously mentioned, the size of a bank's Tier 1 capital and risk-weighted assets depends on the regulations under which they were calculated and on whether the effect of the transitional regulations has been considered. Consequently, the same bank can have different capital ratios depending on how calculations are made. For the major Swedish banks, the different regulations can be of relatively great significance in the calculation of Tier 1 capital ratios (see Chart B1:2). The large differences in Tier 1 capital ratios arise because the risk-weighted assets are greater when the effects of the transitional regulations are considered (see Chart B1:1).

<sup>17</sup> If the banks also have a countercyclical buffer imposed on them at this point, this figure may exceed seven per cent.

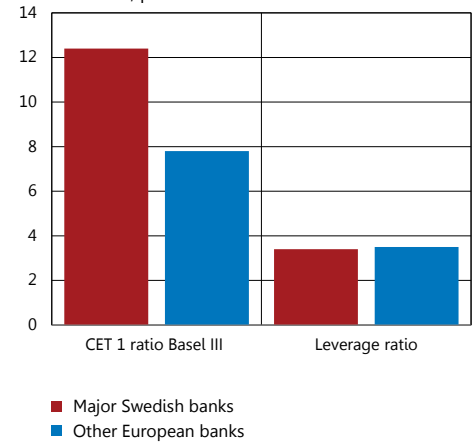
<sup>18</sup> In November 2011, the Riksbank, the Ministry of Finance and Finansinspektionen agreed that new capital adequacy requirements should be introduced for the major Swedish banks. This means that a CET 1 capital requirement of twelve per cent should be imposed on the major banks from 2015.



Under the framework of Basel III, the banks also report CET 1 capital in relation to risk-weighted assets. This ratio is called the core Tier 1 capital ratio. Chart B1:3 shows this capital ratio as well as Tier 1 capital in relation to total assets for the major Swedish banks and a reference group of major European banks. According to these measures, major Swedish banks seem to be better capitalised than the reference group as regards CET 1 ratio and on a par as regards the leverage ratio.

In summary, comparisons of capital ratios between banks are relevant if the capital ratios are calculated in a similar manner and under the framework of the same regulations. It is also important to decide whether the effects of transitional regulations are to be considered in such comparisons. This particularly applies in comparisons between banks in different countries where the exact contents of the transitional regulations in general will differ.

**Chart B1:3. CET 1 ratios and leverage ratios**  
June 2012, per cent



Note. The bars "CET 1 ratio Basel III" show a weighted average. The bars "Leverage ratio" shows an unweighted average. The bar "Leverage ratio" for the major Swedish banks shows an average of the Riksbank's estimate of this capital ratio.

Sources: Bank reports, EBA and the Riksbank



## ■ 2. Financial markets

**Political decisions and measures taken by central banks have contributed to reducing the unease on the financial markets. The low interest rate situation has meant that investors have been more inclined to turn to higher-risk investments to obtain higher returns. However, the development of the financial markets is still sensitive to new shocks, which became clear, for example, in conjunction with the management of the crisis in the Cypriot banking system. This is because major problems remain in the euro area countries' public finances and banking sectors, at the same time as economic growth is weak.**

### Recent developments on the financial markets

LOW INTEREST RATES AND REDUCED UNEASE ON THE FINANCIAL MARKETS ARE LEADING TO INCREASED DEMAND FOR HIGH-RISK ASSETS

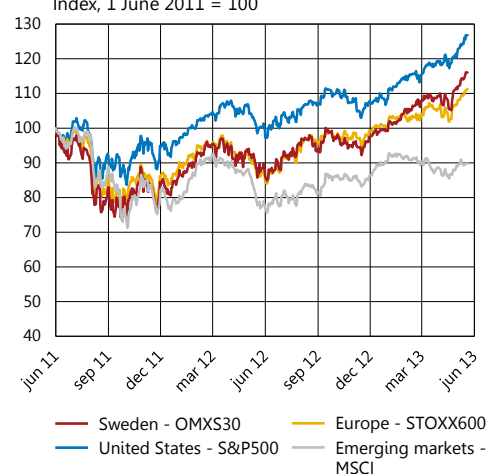
**The most acute unease on the financial markets has subsided.**

This positive development is due to several factors. One factor is that the ECB has undertaken to purchase, on special terms, government bonds issued by the euro area countries on the secondary market. This has contributed towards reducing the risk that the relief funds European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM) may be insufficient and that countries facing crises may be forced to leave the single currency.<sup>19</sup> Another factor is that the uncertainty surrounding developments in a number of countries has diminished. This applies both to Spain, which has taken the first steps towards restructuring and recapitalising its banking system, and to Greece, which in December received the financial assistance from the euro area countries and the International Monetary Fund (IMF) that was delayed due to the political uncertainties connected with the election in 2012. At present, EU negotiations are also underway on joint European banking supervision with the aim of implementation in March 2014, which has also contributed positively to the development of the financial markets. Unease on the financial markets also decreased when issues surrounding US fiscal policy were solved, even if many questions remain. However, the increased unease in conjunction with the Italian election and the management of the crisis in the Cypriot banking system show that the financial markets remain sensitive to shocks that could arise, for example, if renewed political uncertainty should break out or if agreed reform measures are not implemented.

**Reduced unease and a long period of low interest rates have led to increasing demand for high-risk assets among investors.**<sup>20</sup>

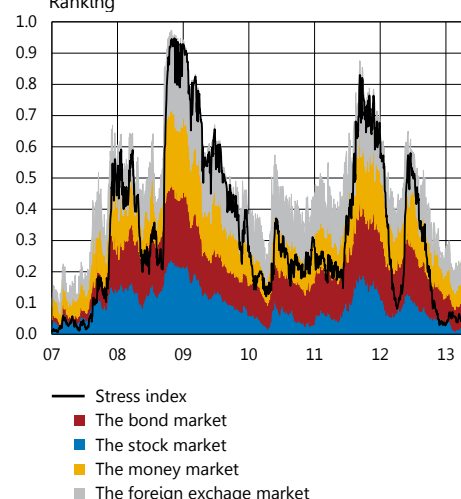
Among other sources, this is reported by participants on the Swedish financial markets in the Riksbank's risk survey.<sup>21</sup> The increased

**Chart 2:1. Stock market developments**  
Index, 1 June 2011 = 100



Source: Bloomberg

**Chart 2:2. Swedish stress index**  
Ranking



Note. The stress index is a correlation-weighted average of the stress level at four markets. The level of stress at a certain point in time takes a value between zero and one where zero signifies the historically lowest level of stress and one signifies the historically highest level of stress. See Further development of the index for financial stress for Sweden, Swedish Riksbank Economic Review 2013:1.

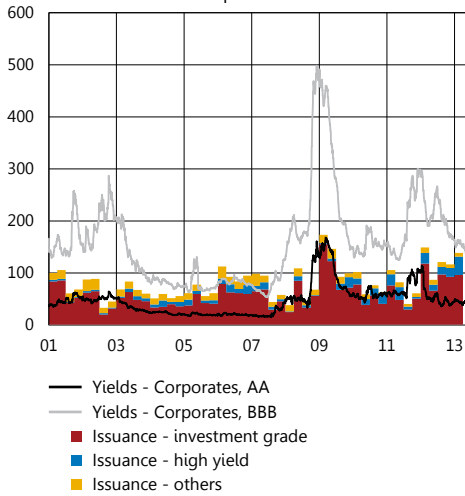
Sources: Reuters EcoWin, Bloomberg and the Riksbank

<sup>19</sup> *Financial Stability Report 2012:2*, Sveriges Riksbank

<sup>20</sup> Johansson, Tor, Search for yield in a low-interest rate environment *Economic Commentary* no. 4, 2013. Sveriges Riksbank.

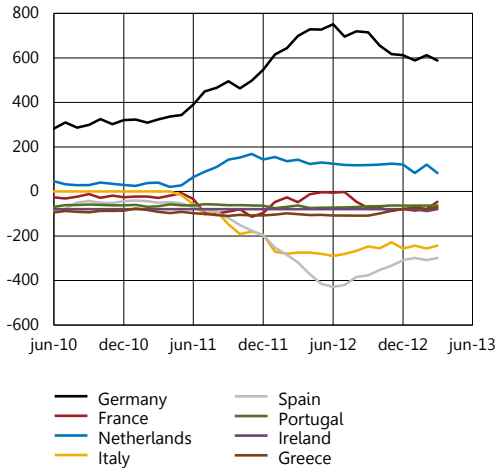
<sup>21</sup> *Market participants' views on risks and the functioning of the Swedish fixed-income and foreign exchange markets, survey spring 2013*, Sveriges Riksbank.

**Chart 2:3. Issuance volumes and funding costs for European corporates**  
EUR billion and basis points



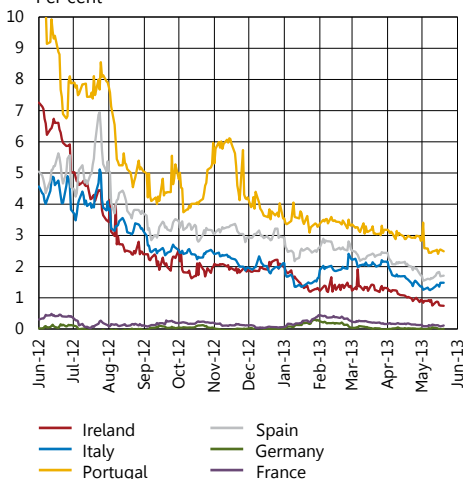
Note. The chart shows the difference between the bond yield and the interest rate swap rate of the same maturity.  
Sources: Barclays Research, Dealogic and the Riksbank

**Chart 2:4. Balances in Target2**  
EUR billion



Note. The target balance shows each country's net position towards other euro area countries in the Target2 payment system.  
Source: Bloomberg

**Chart 2:5. Yields on two-year government bonds**  
Per cent



Source: Reuters EcoWin

demand for high-risk assets is reflected, among other things, by rising stock market rates in most regions (see Chart 2:1). As most financial markets generally have low risk premiums and low volatility, as shown by both the European and Swedish stress indices (see Chart 2:2), investor interest in high-yield corporate bonds has continued to increase. This has led to higher issue volumes and lower funding costs for companies (see Chart 2:3). According to the Riksbank's risk survey, this also applies to Swedish companies. There are also signs that capital flows to emerging economies are increasing as the expected yield on investments in these countries is higher.

**Investors have, to a certain extent, started to return to investing in the banks and securities markets of the euro area countries with sovereign debt problems.**<sup>22</sup> This is reflected by reduced imbalances in the ECB's payment system Target2 (see Chart 2:4). It has also resulted in the yields on government bonds issued by the countries with sovereign debt problems having generally become lower (see Chart 2:5). However, the countries with sovereign debt problems still have deficits in their payment systems and their government bond yields are still high.

**The yields on investments that are considered safe continue to be low from a historical perspective** (see Chart 2:6). To a certain extent, this can be explained by low growth expectations, but above all by the fact that, in general, demand for government bonds with high credit ratings is usually high in times of uncertainty. Furthermore, the supply of assets with the highest credit rating AAA has decreased since several governments and companies have had their credit ratings downgraded. The decreased supply, combined with the high level of demand for safe assets, has also led to yields on these becoming low.

THE UNDERLYING PROBLEMS PERSIST IN MANY COUNTRIES

**Much work remains to be done if the underlying problems in the economies of several euro area countries are to be rectified.** In several countries, measures are needed to reduce central government budget deficits. In addition, several countries need to manage problems in their banking sectors. At the same time, measures are needed to strengthen competitiveness and growth over the longer term.<sup>23</sup>

**Growth in the euro area is weak.** This applies not only to the countries with sovereign debt problems but also to Germany, for example. Unemployment in southern Europe continues to be high, particularly among young people. In Spain and Greece,

<sup>22</sup> Euro-area countries with sovereign debt problems primarily means Greece, Italy, Ireland, Portugal and Spain, see Chart 2:7.  
<sup>23</sup> *Monetary Policy Report*, February 2013. Sveriges Riksbank.

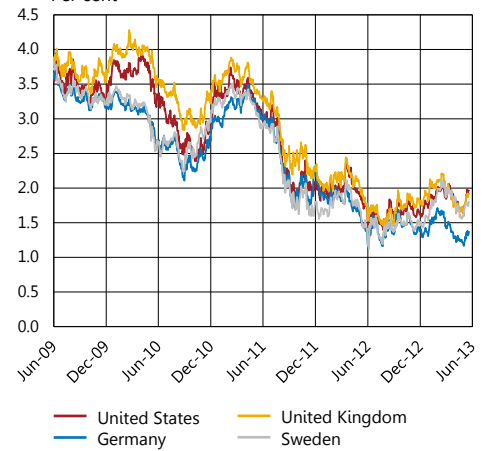
unemployment has risen to over 25 per cent. Weak growth and high unemployment are making it difficult for these countries to reduce their budget deficits and may increase resistance to reforms that may promote growth in the longer term. However, the support measures from the ECB and other authorities, which have contributed to lower funding costs for governments and banks, have created scope for continued reform work. But such support measures cannot replace the reforms needed to make these economies more competitive in the long term.

**In Spain, reforms of the banking sector are underway.** The Spanish government has borrowed EUR 40 billion from the ESM to capitalise the country's banks. The government has also created a 'bad bank' (SAREB) to which certain Spanish banks have sold their problem assets. With this, yields on Spanish banks' covered bonds have fallen (see Chart 2:12). However, the ESM loan for the recapitalisation of the banking sector contributed towards the increase of Spain's sovereign debt as a proportion of GDP by four percentage points (see Chart 2:7).

**For a long time, there was uncertainty over political rule in Italy following the election in February.** In April, the Parliament re-elected the sitting President and a broad coalition government could be formed. However, it is unclear to which extent the new government intends to continue reform work. The political uncertainty at the start of the year led to rising yields for Italian government bonds and rising CDS premiums for the Italian banks' unsecured bonds (see Chart 2:5 and Chart 2:13). There is also uncertainty concerning the situation for the Italian banks. The proportion of impaired loans is continuing to increase and no external audit of the quality of the banks' assets has taken place as yet. In recent years, foreign investors, who tend to be more volatile in times of unease, have decreased their holdings of Italian government bonds. However, about one-third of sovereign debt is still owned by foreign investors (see Chart 2:8). As foreign owners have reduced their holdings of Italian government bonds, domestic banks have increased their holdings to a corresponding degree, which has strengthened the connection between the Italian government and banks.

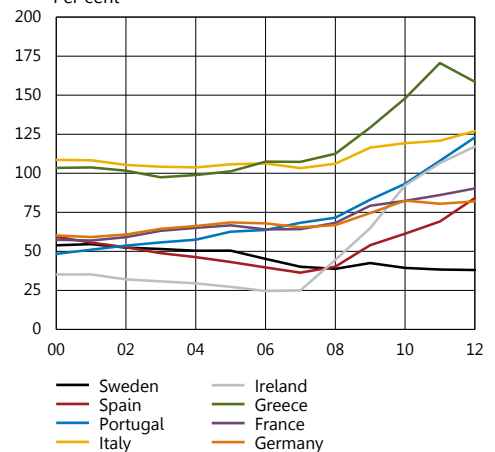
**In Cyprus, depositors and bond-owners partly have to bear the cost of restructuring the country's banking sector.** This was one of the conditions for the ECB and IMF to grant Cyprus a support package of EUR 10 billion to cover the large capital deficit in the country's banking sector. Deposits covered by the deposit guarantee are not affected. On the other hand, deposits exceeding the deposit guarantee are affected, as a certain proportion will be converted into bank shares. These support conditions may lead to companies and private individuals moving their deposits from Cypriot banks to an

**Chart 2:6. Yields on ten-year government bonds**  
Per cent



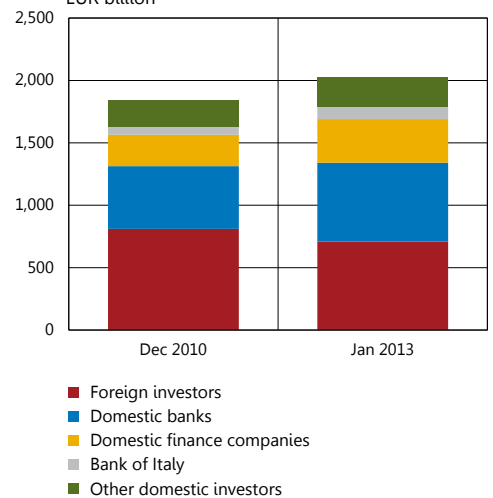
Source: Reuters EcoWin

**Chart 2:7. Public debt in relation to GDP**  
Per cent



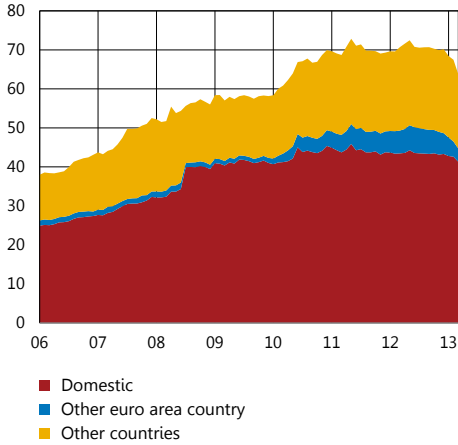
Source: Reuters EcoWin

**Chart 2:8. Ownership structure for Italy's government debt**  
EUR billion



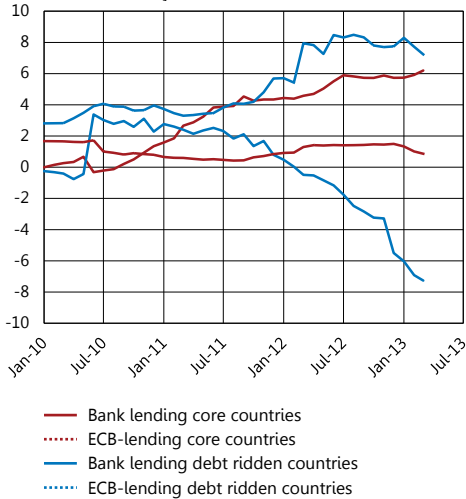
Sources: Bank of Italy and the Riksbank

**Chart 2:9. Bank deposits in Cyprus**  
EUR billion



Sources: Reuters EcoWin and the Riksbank

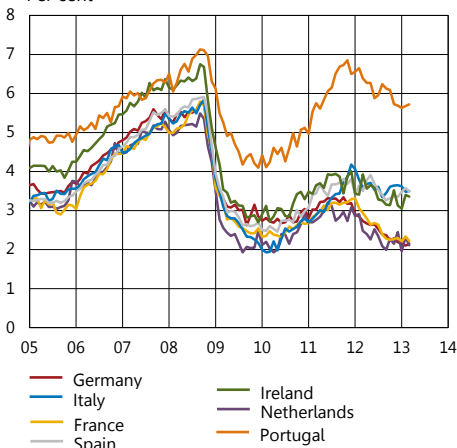
**Chart 2:10. ECB-lending to the banks and banks' lending to the public**  
ECB-lending in per cent of bank assets. Bank lending: Index, 1 January 2010=0



Note. Debt ridden countries refer to Greece, Ireland, Italy, Portugal and Spain. Core countries refer to Germany, France and the Netherlands.

Sources: ECB, Bloomberg and the Riksbank

**Chart 2:11. Interest rates on corporate loans in selected euro area countries**  
Per cent



Note. New and renegotiated loans. All maturities.

Source: ECB

increasing degree (see Chart 2:9). To prevent major capital outflows, Cyprus has introduced restrictions on how much money may be withdrawn from the banks and on how much money may be taken out of the country. Cyprus will also adopt measures to reduce the banking system, which is very large in relation to GDP, and to improve public finances.

**Several central banks are continuing to adopt measures to stimulate the economy.** Among other measures, several central banks are conducting an expansionary monetary policy. For example, the ECB is offering the banks in the euro area unlimited loans at low interest rates, assuming that the banks have collateral. The Bank of Japan has announced comprehensive asset purchases aimed at attaining a new inflation target of two per cent. The Federal Reserve and the Bank of England are also continuing to purchase assets, primarily government bonds and mortgage bonds. These asset purchases are aimed at improving conditions on the financial markets, pushing down long-term interest rates and thereby stimulating consumption and investments.

UNEVEN CREDIT GRANTING IN THE EURO AREA

**Credit granting to companies and households in the euro area is weak** (see Chart 2:10). It also differs from country to country. In Germany, France and the Netherlands, banks' lending to companies and households is increasing. But in the countries with sovereign debt problems, credit growth is negative, which may also be because banks in these countries are writing off bad loans. Lending rates in the countries with sovereign debt problems are also significantly higher than in other countries (see Chart 2:11). This is despite the fact that the banks in the countries with sovereign debt problems have substantially increased their borrowing from the ECB since 2010. The single policy rate has thus had different effects on interest rates for end-customers.

**The low level of credit granting is partly due to diminished supply from the banks in the countries with sovereign debt problems.** As many of these banks do not have enough capital, they need to strengthen their balance sheets by reducing their debts or increasing their equity. When the banks reduce their debts, this gives them little scope to increase their lending to companies and households. The banks therefore need more capital if they are to increase lending. However, investors may be hesitant about funding the banks if they are uncertain of the value of the assets on the banks' balance sheets. One sign that such uncertainty is currently prevalent is the low valuation of European banks on the stock market compared with their book values. If the banks are to increase their capital, increased transparency in the valuation of the banks' assets is thus important.

**Households and companies may also need to reduce their debts.**

This applies in particular to countries with high levels of private indebtedness, such as Spain and Ireland. Reduced demand for credits may thus be an additional factor behind the weak credit growth. However, company surveys indicate that small and medium-sized companies in Spain and Italy are experiencing increased difficulty in obtaining bank loans, which indicates that the supply of bank loans has decreased. However, large companies have been able, to a certain extent, to replace bank loans with funding obtained via the securities market (see Chart 2:3).

**Markets that are important for Swedish banks' funding**

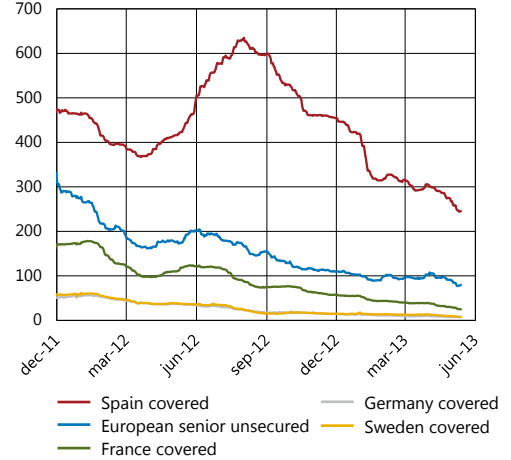
**MARKETS FOR THE BANKS' LONG-TERM FUNDING**

**The reduced unease on the financial markets has made it easier for banks to obtain funding on the market.** At present, it is mainly financially robust banks in countries with strong public finances that can do this. For German and Swedish banks, among others, the cost for funding via covered bonds continues to be very low (see Chart 2:12).

**The banks' funding via unsecured bonds may become more expensive as investors have had to bear losses in the restructuring of banks.** In the Netherlands, investors in subordinated debt had to bear the losses when the country's fourth largest bank, SNS Reaal, was nationalised in February. In Cyprus, investors made losses on their investments in the banks' senior and subordinated bonds when Laiki Bank and Bank of Cyprus were restructured in March. This has meant that hedging losses on the banks' unsecured bonds has become more expensive, which was reflected in higher CDS premiums during the early part of the year (see Chart 2:13). There was a particularly large increase in CDS premiums for banks in Spain, Italy and France, which indicates that investors see greater risks in investing in these banks. The Swedish banks' CDS premiums also increased slightly, but remain low compared with other countries.

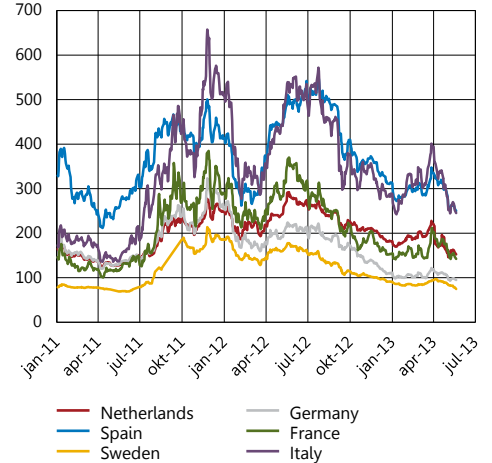
**Investors' interest in Swedish banks' covered bonds with longer maturities has increased since the start of 2012.** The increased demand for long-term bonds has led to a decrease in yields on five-year bonds in relation to yields on two-year bonds (see Chart 2:14). According to the Riksbank's risk survey, this is because investors have become more willing to take the extra risk associated with owning

**Chart 2:12. Yields on covered bonds**  
Basis points



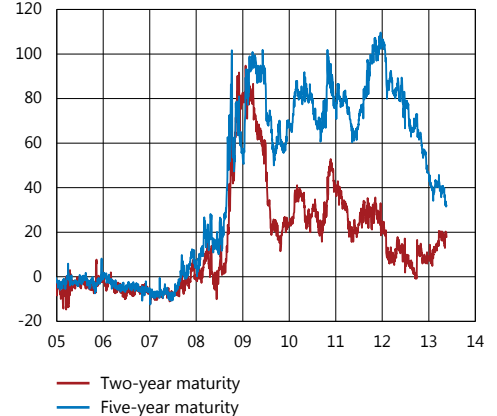
Note. The chart shows the difference between the bond yield of bonds issued in euro and the interest rate swap rate of the same maturity.  
Source: Barclays Research

**Chart 2:13. Five-year CDS-premiums for banks**  
Basis points



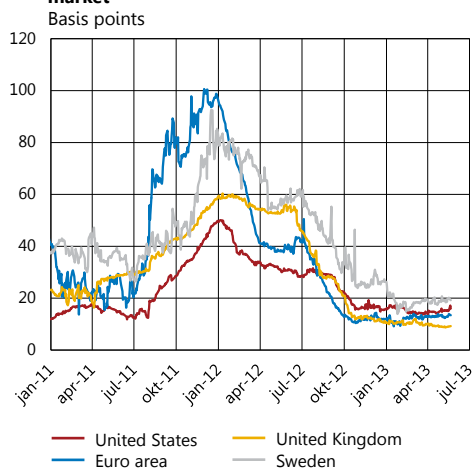
Note. Refers to a selection of larger banks in each country.  
Sources: Bloomberg and the Riksbank

**Chart 2:14. Yields on Swedish banks' covered bonds**  
Basis points



Note. The chart shows the difference between the bond yield of bonds issued in Swedish krona and the interest rate swap rate of the same maturity.  
Sources: Reuters EcoWin and the Riksbank

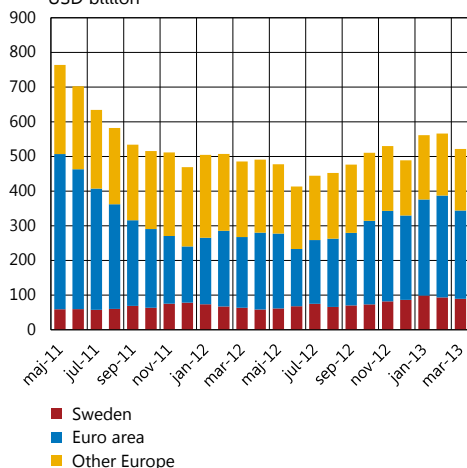
**Chart 2:15. The risk premium on the interbank market**  
Basis points



Note. The risk premium for Sweden is calculated as the difference between the three-month Stibor and the overnight index swap rate (STINA).

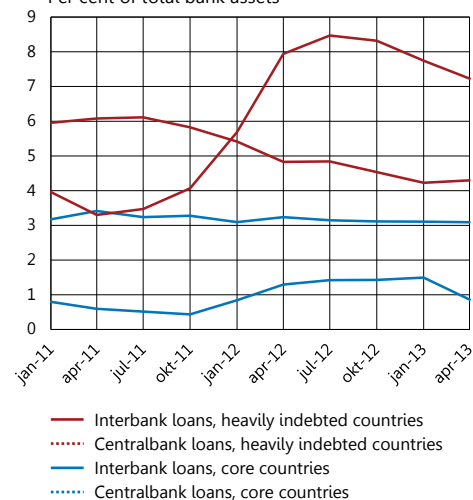
Sources: Bloomberg and the Riksbank

**Chart 2:16. US money market fund exposures**  
USD billion



Sources: Crane Data, ICI and the Riksbank

**Chart 2:17. Interbank and central bank loans**  
Per cent of total bank assets



Note. Heavily indebted countries refers to Greece, Ireland, Italy, Portugal and Spain. Core countries refers to Germany, France and the Netherlands. Interbank loans refers to interbank loans within the euro area. Central bank lending refers to loans from the ECB.

Sources: Bloomberg, Reuters EcoWin and the Riksbank

long-term bonds in order to obtain a higher yield.<sup>24</sup> The reduced difference between the yield on five-year bonds and that on two-year bonds may also be due to the fact that the Swedish banks' supply of long-term bonds has decreased slightly.

## MARKETS IMPORTANT TO THE MANAGEMENT OF LIQUIDITY

**The risk premiums on the interbank market are low due to the good availability of liquidity** (see Chart 2:15). This is largely due to the central banks' support measures. Even if such measures are not in place in Sweden, the Swedish banks benefit as their short-term funding is primarily in foreign currency. Consequently, the Swedish banks have had very good access to short-term wholesale funding for a longer period. Since December 2012, the Swedish banks have started to invest their surplus liquidity in Swedish krona in the Riksbank's weekly certificates instead of in daily fine-tuning transactions.<sup>25</sup>

## European banks have also gained better access to funding in US

**dollar.** Firstly, the cost of obtaining funding in euro and converting this funding into US dollar on the currency swap market has fallen slightly. Secondly, access to direct funding in US dollar from US money market funds, for example, has increased slightly (see Chart 2:16). This indicates that the funds' confidence in European banks has increased. However, for banks in the euro area, the funds' investments are significantly lower than they were at the start of 2011.

## Mainly, banks in the core countries have chosen to pay off the ECB's three-year loans

(see Chart 2:17).<sup>26</sup> These repayments may be taking place because the banks can obtain funding at a lower cost on the market than via loans from the ECB. They may also be due to the banks' assessment that the need to maintain a liquidity reserve has decreased. This may particularly be the case for banks in countries in which the banking system has a large liquidity surplus. The replacement by the banks of loans from the ECB with wholesale funding is one reason for the decrease of imbalances in the payment system Target2 (see Chart 2:4). In contrast, many banks in the euro area countries with sovereign debt problems are still encountering difficulties in obtaining loans from other banks and have thus not repaid the three-year loans to the same extent.

<sup>24</sup> Market participants' views on risks and the functioning of the Swedish fixed-income and foreign exchange markets, survey spring 2013, Sveriges Riksbank.

<sup>25</sup> The certificates can be prematurely sold back to the Riksbank for a fee if the bank should be in need of liquidity.

<sup>26</sup> Three-year loans from the ECB can be repaid on a voluntary basis each week until the loans mature in December 2014 and February 2015.



**The ECB's support measures have reduced activity on the markets for the management of liquidity.** However, these measures may also have allowed other banks to replace traditional types of short-term funding with central bank funding. For example, the outstanding volume of repos in the euro area decreased by twelve per cent between December 2011 and December 2012.<sup>27</sup>

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<sup>27</sup> According to surveys carried out every six months by the European Repo Council of the International Capital Market Associations (ICMA).

# International reform proposals for splitting up banks

**In the years leading up to the latest global financial crisis, the EU's banking sector grew substantially and had assets equivalent to 350 per cent of the EU's GDP by the start of 2008. In addition, several major financial institutions around the world changed the focus of their operations from traditional banking operations to operations with an increasing emphasis on trading in financial instruments. As the financial crisis has entailed major economic costs in several countries, comprehensive international reform and regulatory work has now been initiated. One proposed reform involves splitting up the banks into two clearly defined parts on the basis of those of the banks' activities that are deemed worth protecting in terms of their social benefits.**

Banks provide several useful social functions as they convert savings into investments (credit intermediation), manage risk and mediate payments. These functions are central to the functioning and growth of the economy. However, certain banks also carry out other activities, such as trading in financial instruments on their own behalf (proprietary trading), which, strictly speaking, are more difficult to justify from a social perspective. The losses made by a bank from such activities may threaten the bank's survival and thereby also the useful social functions the bank contributes. This means that banking crises can result in social costs greatly exceeding those costs impacting the bank's shareholders. The idea of splitting up the banks' operations has grown from this background.

## *Traditional banking activities support trade in financial instruments*

One problem that arises when traditional banking operations and trade in financial instruments are mixed is that the latter activity can be said to be supported by the former. This is because deposits from the general public provide the bank with stable and cheap funding, particularly as governments often guarantee deposits up to a certain amount (an explicit government guarantee). Furthermore, investors expect that, in a crisis, the government will not allow the bank to go bankrupt (an implicit government guarantee). These government guarantees give the bank as a whole lower funding costs than would otherwise have been the case. This may have resulted in the banks' own costs for trade in financial instruments becoming too low and may thus have led the banks to take greater risks than are optimal from the economy's point of view.

Splitting up the banks' operations can both ensure that the banks' trade in financial instruments is not funded by government-guaranteed deposits and isolate the risks so that they do not spill over into traditional banking operations. Advocates of splitting up the banks' operations also claim that this would simplify supervision

of the banks and make it easier, in a future crisis, to allow the operations not worth protecting to go bankrupt, as they would already have been separated from the operations worth protecting.

The banks may carry out trade in financial instruments either on their own behalf (proprietary trading) or on their customers' behalf (market making). A market participant (for example a pension company) can turn to a market maker to purchase or sell an instrument. The market maker ensures that the market is liquid and that trading can take place smoothly. Proprietary trading and market making are closely related, and there is, in practice, no simple way of separating them. There are also diverging views on whether market making by the banks should be seen as worth protecting, which is reflected by the various reform proposals.

### *Reform proposals*

The idea of separating traditional banking operations from other operations arose as long ago as the 1930s, when the Glass-Steagall Act entered into force in the United States. According to this Act, banks could engage in either traditional banking operations or investment banking operations, but not both at the same time. The Act was repealed in 1999 to help US banks compete globally. Since the law was repealed, many US banks have again moved beyond traditional banking operations into higher-risk operations involving trade in various financial instruments.

In the wake of the crisis, proposals for a split have again been raised in the United States. Similar proposals have also been put forward in individual European countries. On the EU level, a proposal has been presented by the Liikanen group.

#### ***The United States introduces the Volcker Rule***

The United States has decided to introduce the much-debated Volcker Rule. The Volcker Rule stipulates that banks accepting deposits are prohibited from conducting proprietary trading on the group level. However, they may carry out transactions for customers, which includes the banks' activities as market maker. At present, the US authorities are working on developing proposals for how to separate proprietary trading from the banks' market making activities, so that the Volcker Rule can be implemented in practice.

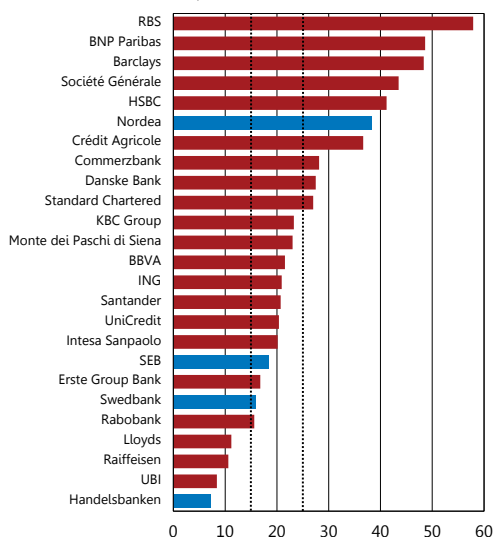
#### ***Europe prefers a compromise***

Instead of a US-style prohibition, applied on the group level, the European reforms propose a compromise in which those banking operations not deemed to be worth protecting can still be conducted within the same banking group, but in a separate legal entity clearly separated from other banking operations.

These different parts are to be economically independent, separately run and easily distinguishable. They are also to comply with applicable capital requirements and liquidity regulations by

**Chart B2:1. European banks' held-for-trading assets and available-for-sale assets as a proportion of total assets**

December 2011, Per cent



Source: SNL Financial

themselves. To ensure that the operations not worth protecting are completely separate from the other operations, it is proposed that integrated banking groups assume the form of a holding company. The various European proposed reforms are described in more detail below.

#### United Kingdom

In the autumn of 2011, an independent banking commission proposed that larger banks should place their traditional banking operations into a separate legal entity. It is thus the operations worth protecting that are to be separated, according to the British proposal.

The separated company may provide what are known as obligatory services. These services include receiving deposits and providing overdrafts. On the other hand, the separated company may not provide what are known as forbidden services, including acting as a market maker. Neither may they offer their services to customers outside the EEA.

#### The European Union - the Liikanen Report

In October 2012, the Liikanen Group presented its report, which includes the recommendation that larger banks within the EU be obliged to place activities not worth protecting in a separate legal entity.

The assessment of which banks are to be subject to the requirement for such a split is to be carried out in two stages. The first stage will examine which proportion of the banks' total assets is held for trading and which can be sold rapidly. If this proportion exceeds a threshold value suggested to range between 15 and 25 per cent of total assets, or if these assets amount to EUR 100 billion, the next stage will be entered. In the second stage, the supervisory authorities determine whether a split is justifiable.

According to the Liikanen Group's proposal, the results of the first stage of the assessment are reported in Chart B2:1, in which the Swedish banks are marked blue. According to the chart, a minimum of one and a maximum of three Swedish banks should proceed to the next stage of the assessment, depending on what is decided regarding the threshold value. The Liikanen Group is also open to there being a number of exceptions in the calculations in stage one as regards hedging against non-financial customers and other matters. Furthermore, it remains to be decided how the assessment in stage two will be made. It is thus difficult to say, at present, how the proposals in this part would actually affect the Swedish banks.

In addition, the Liikanen Group proposes that both a bank's proprietary trading and its market-making activities are to be included in the separated company. Its main argument for this is that separating these activities would be too difficult.

The European Commission has stated that it plans to produce a draft of the act, based on the Liikanen Group's proposal, in the third

quarter of 2013. At this point, the European Commission will also present an impact analysis of the proposal.

### France and Germany

France and Germany launched their own reform proposals at the end of December 2012 and in February 2013 respectively. The French and German proposals are strongly inspired by the Liikanen Group. The main difference from the Liikanen Group's proposal is that the market maker side activities do not have to be placed in the separated company. However, in France, it will be completely forbidden to engage in certain types of high frequency trading and commodity speculation in agricultural products. In Germany, the German supervisory authority has instead been given a clear mandate to determine, on a case-by-case basis, whether a bank's market-making activities should not be considered to be worth protecting and should therefore be placed in the separated company. Table B2:1 below summarises the main parts in the various reform proposals.

**Table B2:1. Comparison of the various reform proposals**

	<b>United States</b>	<b>United Kingdom</b>	<b>Liikanen</b>	<b>France</b>	<b>Germany</b>
<b>Holding companies with the various operational areas in subsidiaries</b>	Not permitted	Permitted	Permitted	Permitted	Permitted
<b>Deposit bank may conduct proprietary trading in securities and derivatives</b>	Not permitted (exception for US government securities)	Not permitted	Not permitted	Not permitted	Not permitted
<b>Deposit bank may act as market maker</b>	Permitted	Not permitted	Not permitted	Permitted	Permitted
<b>Geographical restrictions</b>	No	Deposit banks face limits on customers outside the EEA	No	No	No
<b>Maximum size for coverage</b>	No	Yes, banks with more than GBP 25 billion in deposits (about 2–5 banks)	HFT+AFS >EUR 100 billion or >15–25% of balance sheet (about 15–20 banks)	HFT+AFS >EUR 100 billion or >20% of balance sheet (about 3 banks)	HFT+AFS >EUR 100 billion or >20% of balance sheet (about 2–4 banks)
<b>Coming into force</b>	2013–2014	2019	Not decided	July 2015	July 2015

Note. The deposit bank is the bank accepting deposits (that is not the company conducting proprietary trading). AFS (Available For Sale) denotes assets that can be sold rapidly, while HFT (Held For Trading) denotes assets intended for trade.

Sources: *Wholesale and investment banking outlook report*, 2013, Oliver Wyman & Morgan Stanley and the Riksbank.



## ■ 3. The Swedish banks' borrowers

Despite the weak economic development in Europe, more households than before believe that the Swedish economy will grow and that housing prices will continue to rise. This supports the assessment that household debt will continue to increase. However, large assets in relation to liabilities mean that the net wealth of the households is high at present. The companies' creditworthiness and willingness to invest have weakened somewhat, although there are signs that the companies have become slightly less pessimistic about the future. The situation looks different in Denmark, where the banking and property crisis of recent years has led to continued low growth in the Danish economy.

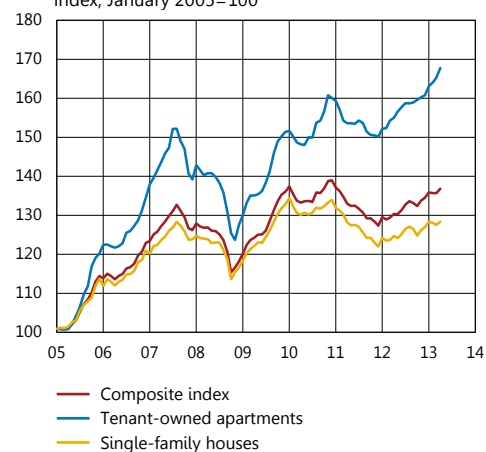
### The Swedish household sector

**Housing prices have continued to rise and Swedish households expect this trend to continue.**<sup>28</sup> This is partly due to the fact that household confidence in the Swedish economy has increased and that interest-rate expectations are low.<sup>29</sup> The prices of both tenant-owned apartments and single-family houses have also increased recently, which has contributed to the growing optimism. However, prices for tenant-owned apartments have increased significantly faster than prices for single-family houses (see Chart 3:1).

**Low new housing construction in Sweden** (see Chart 3:2). Housing construction has been low for quite some time now, which is one of the reasons behind the substantial price increases on the Swedish housing market in recent decades.<sup>30</sup> The low level of new construction can partly be explained by high land and construction costs and partly by the fact that planning, construction and environmental legislation set stringent standards for the type of housing that may be built.<sup>31</sup> The municipal land monopoly also means that Sweden's municipalities govern the standard of new housing projects, which affects both the willingness to build and competition.<sup>32</sup> The rental regulation may also have reduced interest in building new rental apartments and made other investment alternatives more attractive.<sup>33</sup> For example, the number of rental apartments remained unchanged between 1990 and 2011 while the number of tenant-owned apartments increased by 50 per cent during the same period (see Chart 3:3).

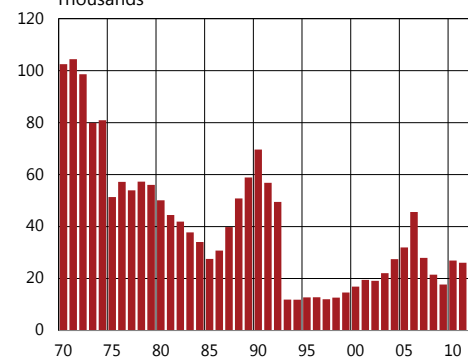
**As the percentage of tenant-owned apartments has increased, the level of household debt has also increased.** This is because the majority of households that buy a tenant-owned apartment take out a mortgage. If the percentage of tenant-owned apartments had remained unchanged in relation to the percentage of rental

**Chart 3:1. Real housing prices**  
Index, January 2005=100



Note. Real housing prices are defined as nominal prices deflated by the CPI. Seasonally-adjusted data.  
Sources: Valueguard and the Riksbank

**Chart 3:2. Number of housing starts**  
Thousands



Note. The outcome for 2012 is preliminary.  
Source: Statistics Sweden

<sup>28</sup> House price indicator, April 2013, SEB.

<sup>29</sup> Economic Tendency Survey, March 2013, National Institute of Economic Research.

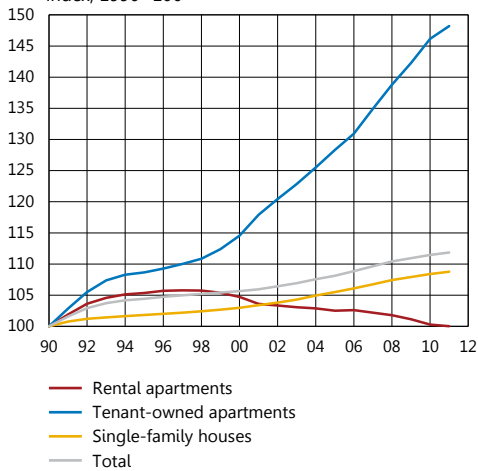
<sup>30</sup> See, for example, Englund, Peter (2011), Swedish house prices in an international perspective in the Riksbank's commission of inquiry into risks on the Swedish housing market and Are house prices driven by a housing shortage?, 2013, the National Board of Housing, Building and Planning.

<sup>31</sup> Så här kan vi skapa förutsättningar för fler bostäder i Sverige, (How to create the preconditions for more housing in Sweden), 2010, Swedish Construction Federation and "Vad händer på bostadsmarknaden?" (What is happening on the housing market?), 2013, SNS Analyt.

<sup>32</sup> "Land, housing construction and competition", 2012, Swedish Agency for Public Management.

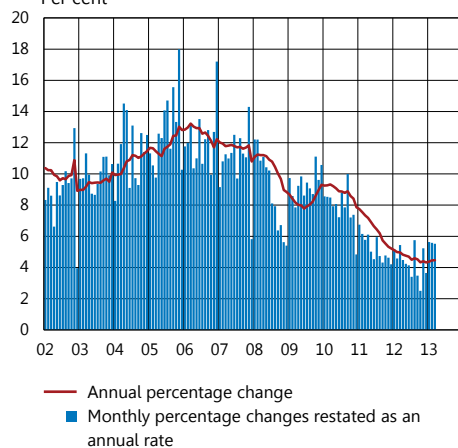
<sup>33</sup> Renting: from a declining right to an increasing opportunity, SOU 2012:88.

**Chart 3.3. Housing stock by type and tenure**  
Index, 1990=100



Sources: Statistics Sweden and the Riksbank

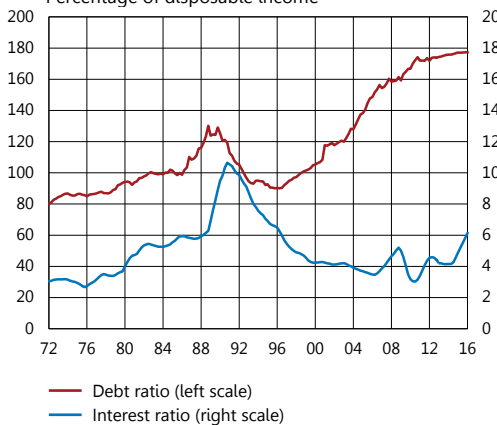
**Chart 3.4. Household debt**  
Per cent



Note. Seasonally-adjusted data.

Sources: Statistics Sweden and the Riksbank

**Chart 3.5. Household debt and post-tax interest expenditure**  
Percentage of disposable income



Note. Dashed lines represent forecast made by the Riksbank.

Sources: Statistics Sweden and the Riksbank

apartments since 1999, there would now be over 230,000 more rental apartments and 230,000 fewer tenant-owned apartments. Total household debt would then have been approximately SEK 140 billion or approximately 4.7 per cent lower than the current level.<sup>34</sup>

**After slowing down in 2012, the rate of growth in household debt has again begun to increase.**

The initial slowdown was probably due to the uncertainty about developments in the euro area and the fact that the households' confidence in their own financial situation and the Swedish economy was relatively low, at the same time as interest rates in Sweden were relatively high. The banks have also tightened their credit standards. Apart from the mortgage cap requiring capital investment, the banks now demand that new borrowers amortise their loans to a greater extent than previously. However, since the turn of the year there have been signs that household debt has once again begun to increase at a relatively rapid rate, which can partly be related to the increasing confidence of the Swedish households (see Chart 3:4).

**Household debt is expected to increase somewhat faster than household income in the years ahead**

(see Chart 3:5). The household debt ratio (the households' debts as a percentage of their disposable incomes) is therefore expected to increase slightly up to the end of 2015. Debts are expected to increase as growth, consumer confidence and housing prices increase. Mortgage rates are also expected to remain relatively low. The low level of interest rates also means that the interest ratio (the households' interest expenditure as a proportion of their disposable incomes) is low. However, interest rates are expected to be higher towards the end of 2014 and consequently the interest ratio is also expected to increase.

**The level of indebtedness varies widely among new mortgage borrowers**

(see Chart 3:6). This is revealed by the random sample in Finansinspektionen's survey of the Swedish mortgage market.<sup>35</sup> There are also regional differences with regard to indebtedness (see Table 3:1). Debt ratios are much higher in the metropolitan areas, for example, than they are in the rest of the country. However, the aggregate debt ratio for the household sector as a whole is significantly lower than the debt ratio for new borrowers throughout Sweden (see Chart 3:5). This difference is due to the fact that the aggregated measure includes households that do not have debts but do have incomes. The sampling in the survey also reveals that average indebtedness has decreased over the years.

<sup>34</sup> This calculation is based on the assumption that the percentage of rental apartments remained constant throughout the period from 1990 to 2011. This means that for each single year the percentage of tenant-owned apartments decreases so that the percentages are constant. It has also been assumed that a household that would have bought a tenant-owned apartment would have borrowed 75 per cent of the purchase price and have paid the average price for a tenant-owned apartment for a given year.

<sup>35</sup> *The Swedish Mortgage Market 2013*, Finansinspektionen.



**Table 3:1. Debt ratios of new borrowers**

Typical household, total debt in relation to disposable income

	2011	2012
City of Stockholm	504	461
City of Göteborg	427	394
City of Malmö	364	338
Other municipalities	321	290
Whole country	354	318

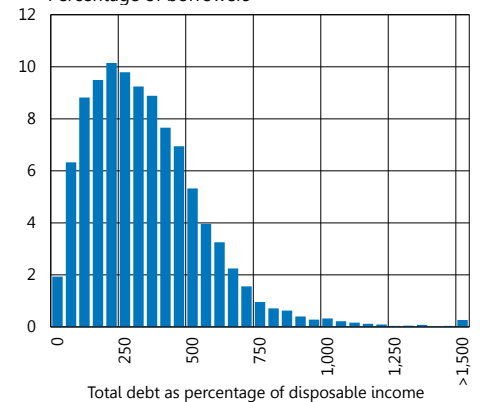
Note. Typical household refers to the median in the sample.  
Sources: Finansinspektionen and the Riksbank

**Total household saving is high** (see Chart 3:7). In 2012, total household saving, which includes allocations to collective insurance schemes (occupational pension schemes and the premium pension system), real saving (investments in housing) and personal financial saving, increased to a level comparable to the level of saving during the crisis of the 1990s. The households' personal financial saving, that is the net figure for bought and sold financial assets and net amortisation (amortisation payments minus new debts) has also increased and was positive throughout 2012.<sup>36</sup> However, the level of personal financial saving indicates that the households' net amortisation payments are small.<sup>37</sup>

**In general, the debt-servicing ability of the households is expected to remain strong in the near term.** Stress tests conducted by Finansinspektionen with the aid of data on new mortgage borrowers show, for example, that the debt-servicing ability of the households is good even in scenarios with substantial increases in interest rates and unemployment.<sup>38</sup> Furthermore, total household wealth (excluding wealth in collective insurance schemes) is approximately three times as high as total household debt (see Chart 3:8). The households' net wealth, excluding collective insurance saving, is also 3.5 times higher than their disposable income. However, the value of the households' assets, which primarily consist of housing and financial assets such as shares and mutual funds, may vary while the value of the debts will remain constant. The net wealth of the households is thus affected by changes in value on the housing market and developments on the financial markets.<sup>39</sup>

**Highly-indebted households are sensitive to changes in interest rates** (see Chart 3:9). More than 12 per cent of the households that have recently taken out a mortgage and that have a debt ratio of over 600 per cent will be in deficit in a discretionary income calculation<sup>40</sup> if one assumes that the mortgage rate increases by

**Chart 3:6. Distribution of debt ratios of new mortgage borrowers 2012**  
Percentage of borrowers



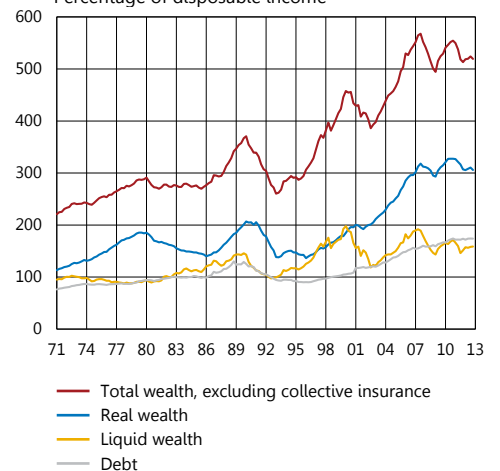
Sources: Finansinspektionen and the Riksbank

**Chart 3:7. Household savings**  
Percentage of disposable income



Note. Own financial saving is total savings excluding collective and real saving.  
Source: The Riksbank

**Chart 3:8. Household assets and debt**  
Percentage of disposable income



Note. Liquid wealth refers mainly to cash, bank deposits, bonds and equity.  
Sources: Statistics Sweden and the Riksbank

<sup>36</sup> Total personal saving is the sum of real saving and personal financial saving, which is the same as total saving excluding collective insurance saving.

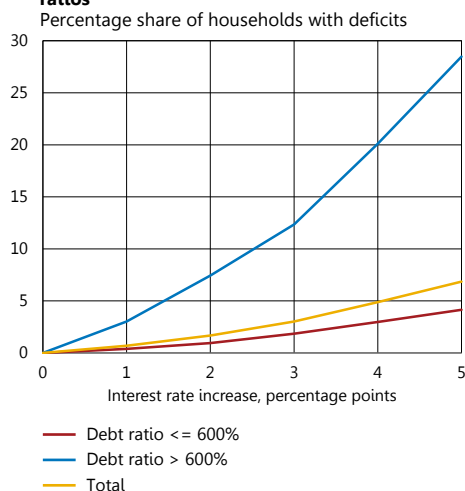
<sup>37</sup> If the net figure for bought and sold financial assets is zero, the definition of personal financial saving means that it constitutes a ceiling for the size of the households' net amortisation payments.

<sup>38</sup> *The Swedish Mortgage Market 2013*, Finansinspektionen.

<sup>39</sup> The household balance sheet and the macroeconomic assessment in *Monetary Policy Report*, February 2013, Sveriges Riksbank.

<sup>40</sup> Such a calculation enables the banks to see how much of its disposable income a household has left after housing costs and other living costs have been paid.

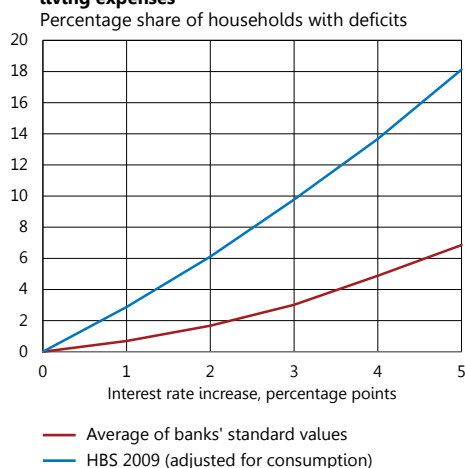
**Chart 3:9. Households with deficits following an increase to the actual interest rate split across debt ratios**



Note. Percentage share of households with deficits (y-axis) and interest rate increase in percentage points (x-axis).

Source: Finansinspektionen

**Chart 3:10. Households with deficits following an increase to the actual interest rate given different living expenses**



Note. Percentage share of households with deficits (y-axis) and interest rate increase in percentage points (x-axis).

Sources: Finansinspektionen, Statistics Sweden and the Riksbank

three percentage points compared to the actual rate in the contract. This is despite the fact that the calculation does not include expenditure for any amortisation payments.<sup>41</sup> Although a majority of the households with a mortgage have a debt ratio that is lower than 600 per cent, this calculation shows that many highly-indebted households have small margins.<sup>42</sup>

**Even if a household is in surplus in the discretionary income calculation, higher interest rates may mean that the household chooses to reduce its saving and consumption.** If the household's actual living costs are higher than the standard values used in the banks' credit assessments (see Table 3:1), a mortgage may prove to be a greater burden to the household than indicated by the discretionary income calculation. If, for example, the mortgage rate increases by three percentage points, the percentage of households in deficit will increase from approximately three per cent, according to calculations using the banks' standard values, to almost ten per cent, according to calculations using Statistics Sweden's data on the households' actual expenditure (see Chart 3:10). The households may of course continue to service their debts, but to do so they will need to reduce their saving or their consumption. There will be a negative impact on growth if a large proportion of households choose to reduce their consumption. This in turn may reduce the profitability of Swedish companies and ultimately lead to increased loan losses for the banks.

**Table 3:2. Households' living expenses according to different methods of calculation**

SEK per month	Average of banks' standard values	Expenditure according to HUT 2009
One adult	7,800	11,150
One adult, one child	11,200	13,700
Two adults	14,200	21,950
Two adults, two children	20,050	29,050

Note. The table shows an average of the standard values for living costs that the banks used in their credit assessments in 2012 and the corresponding expenditure according to Statistics Sweden's survey of household expenditure (HUT) in 2009. Living costs do not include housing costs (interest expenditure, fees and amortisation payments) but cover the goods and services (food, clothing, insurance, consumer goods, media etc.) that the household needs to maintain a reasonable standard of consumption. The data from HUT has been adjusted upwards in line with the change in consumption per capita between 2009 and 2012.

Sources: Finansinspektionen, Statistics Sweden and the Riksbank.

<sup>41</sup> If one assumes that the amortisation period is 50 years, this represents a mortgage-rate increase after tax deductions of 2.86 percentage points.

<sup>42</sup> In the data for Finansinspektionen's stress test, approximately eleven per cent of the households had a debt ratio of over 600 per cent.

## The Swedish corporate sector

**Corporate borrowing decreased last year** (see Chart 3:11). This relates to the weak economic climate which has led the companies to reduce their level of investment. Some companies have also found it more difficult to fund their operations, which may have contributed to the decline in credit growth. Among the companies stating that they have found it difficult to find funding, the majority say that the main reason is that it has become more difficult to get bank loans.<sup>43</sup> As the level of corporate investment is expected to remain largely unchanged in 2013, the companies' debts are expected to grow only marginally during the year.

**The default rate will increase in the short term but will stabilise as economic activity improves** (see Chart 3:12). Bankruptcies will increase the most among small and medium-sized companies in the construction, transport and service sectors. Moreover, demand from other countries in Europe is still weak, which is putting pressure on the profitability of the export companies. However, the acute unease on the financial markets has subsided and there are several indications that the companies have become somewhat less pessimistic about the future.<sup>44</sup> Similarly, the probability of default for Swedish listed, non-financial companies has lessened in the early part of this year. The low level of interest rates is keeping the companies interest costs down, which may also reduce the risk of further bankruptcies. Compared to the situation in other European countries, the number of bankruptcies in Sweden is relatively low (see Chart 3:13). All in all, the assessment is that the debt-servicing ability of the Swedish companies is good given the current economic climate.

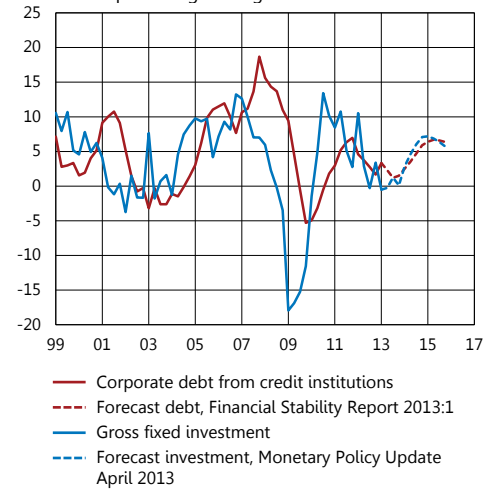
**The development of the commercial property market was relatively stable in 2012.** The market has adjusted to the current economic situation, which is reflected, for example, in the fact that the price increases of recent years have come to a halt.<sup>45</sup> The picture is mixed, however, as the demand for centrally-located office premises increased somewhat in 2012. For example, rents and average prices per square metre increased in central Stockholm.<sup>46</sup>

## The Swedish banking groups' borrowers abroad

### DENMARK

**The Danish economy continues to be affected by the banking and property crisis of recent years.** The reason for this is that the Danish households are still in the process of strengthening their balance sheets. Falling housing prices have meant that more

**Chart 3:11. Corporate borrowing from credit institutions and fixed gross investment**  
Annual percentage change



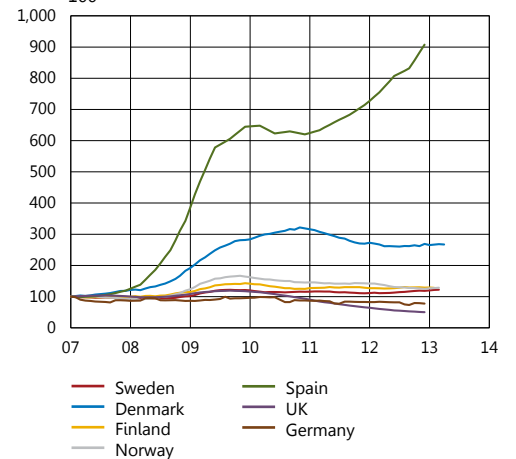
Sources: Statistics Sweden and the Riksbank

**Chart 3:12. Default rate for Swedish companies**  
Per cent



Note. The default rate is defined as the number of defaults divided by the number of companies.  
Source: The Riksbank

**Chart 3:13. Corporate defaults**  
Twelve-month moving average, index, average 2007 = 100



Sources: Reuters EcoWin, Destatis Statistisches Bundesamt and the Riksbank

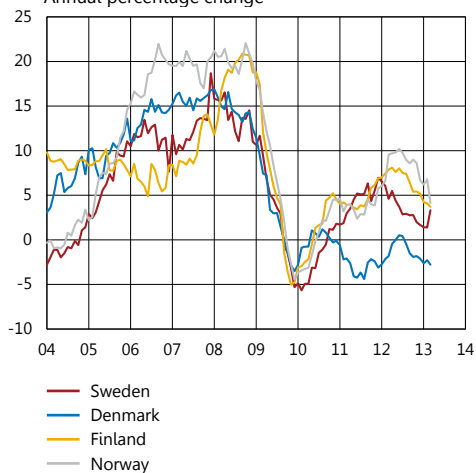
<sup>43</sup> See *Economic Tendency Survey*, March 2013, National Institute of Economic Research.

<sup>44</sup> See *Monetary Policy Update*, April 2013, Sveriges Riksbank.

<sup>45</sup> International Property Data.

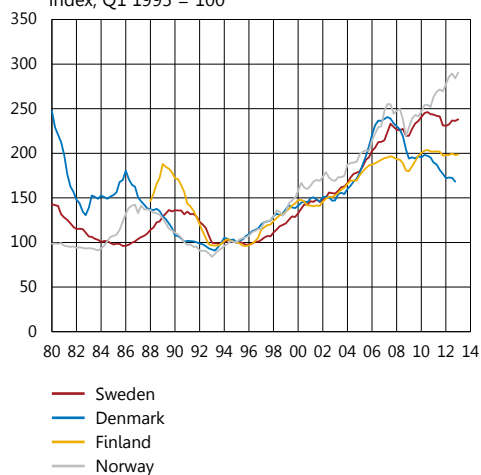
<sup>46</sup> Pangea property research and Strateg Fastighetskonsult.

**Chart 3:14. Corporate borrowing**  
Annual percentage change



Sources: Reuters EcoWin, Bank of Finland and the Riksbank

**Chart 3:15. Real house prices**  
Index, Q1 1995 = 100



Note. Real house prices are defined as nominal prices deflated by the CPI.

Sources: Reuters EcoWin and the Riksbank

households are now in a situation in which their loans exceed the value of their homes. In order to get a better balance between assets and liabilities, more Danish households have thus chosen to save rather than consume. For example, household financial saving reached historically-high levels, at the same time as private consumption has been below its long-term average.<sup>47</sup> However, the Danish government's stimulation measures and the low level of interest rates mean that both fiscal policy and monetary policy will remain expansionary in the year ahead, which should support the ability of the Danish households to consume.

**The demand for loans in Denmark is low.** This is reflected, for example, by the fact that credit growth for the Danish companies has been negative over the last 12 months (see Chart 3:14). It is above all the low level of domestic demand and the unease in the euro area that have led the Danish companies to wait and see before taking further loans. The Danish mortgage institutions have also been somewhat more restrictive in their lending, mainly due to the tightening of credit regulations. For example, the Danish mortgage institutions have begun to be more restrained about granting variable interest rates and interest-only loans. The demand for loans is not expected to increase until the households have restored their balance sheets and a clear improvement is seen on the housing and labour markets.

**Debt-servicing ability in Denmark is deemed to be weaker than in the other Nordic countries.** This is mainly due to the weak development of the Danish labour market and to the rapid decrease in household wealth following the fall in prices on the housing market in recent years. In addition, heavily-indebted households that were given a ten-year respite on making amortisation payments in 2003 will be forced to begin repaying their mortgages again in 2013. Households with this type of deferred amortisation are also those with the highest loan-to-value ratio in Denmark, which also affects their capacity to service their debt.<sup>48</sup> Weak domestic demand and weak economic development in Europe are also factors that have undermined the creditworthiness of the Danish companies. The number of bankruptcies is still at a high level in Denmark, for example (see Chart 3:13). A large fraction of the loan losses for Swedish banks stem from Danish companies and this is expected to be the case for some time to come (see Chapter 4).

<sup>47</sup> *Monetary Review 1st Quarter Part 1, 2013*, Danmarks Nationalbank.

<sup>48</sup> *Monetary Review 4th Quarter Part 1, 2012*, Danmarks Nationalbank.

FINLAND

**The Finnish economy shrank in 2012, partly due to a fall in exports.**<sup>49</sup> Important export companies in the electronics and paper industries were hit particularly hard by the lack of demand from abroad. The debt-servicing ability of the Finnish households has also deteriorated as the labour market has weakened and wage increases have been low. In combination with increased pessimism among both the households and companies this has dampened domestic demand, which has also undermined the creditworthiness of the Finnish companies. The relatively high level of credit growth during large parts of 2012 can partly be explained by the fact that the Finnish companies took advantage of the low level of interest rates to make long-term investments. However, the weak growth prospects in Finland have led several companies to postpone their investments. As a result, credit growth is expected to be subdued in 2013.

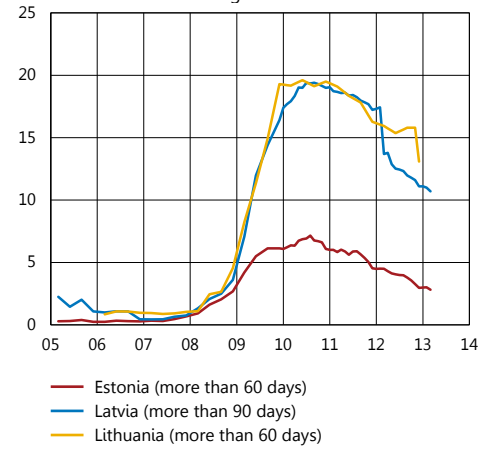
NORWAY

**Following a slight downturn in 2012, the Norwegian economy is looking strong again.** It is above all the good revenues from the oil sector that are contributing to the good growth prospects. At the same time, prices for commercial properties and housing are continuing to increase at a rapid rate (see Chart 3:15). These price increases can be explained in terms of high real-wage increases for Norwegian households, which are partly due to the fact that the labour market continues to be strong. The assessment of Norges Bank is that housing prices will increase further in the years ahead, which also means that the indebtedness of the Norwegian households is expected to increase further from an already historically-high level.<sup>50</sup> The Norwegian authorities are therefore planning to introduce increased capital requirements and higher risk weights for mortgages as a means of dampening credit growth and increasing resilience in the Norwegian banking sector.

BALTIC COUNTRIES

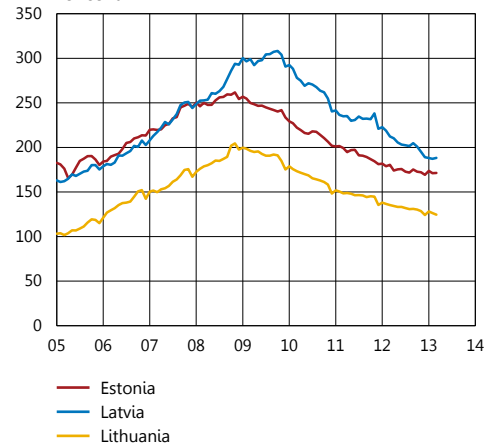
**The debt-servicing ability of the Baltic borrowers has improved** (see Chart 3:16). The reason for this is that both households and companies are benefiting from increased real incomes and the low level of interest rates. However, credit growth is weak as the households continue to reduce their indebtedness. Meanwhile, deposits are increasing, which together with the shrinking loan stock means that the banks are funding an increasing part of their lending with domestic deposits instead of borrowing from Swedish parent banks (see Chart 3:17). Despite a somewhat brighter picture of developments in the Baltic countries, the assessment is that the loan losses stemming from the major Swedish banks' operations in these

**Chart 3:16. Late payments**  
Per cent of outstanding loans



Note. The definition of late payments differs from country to country. The breaks in the series for Latvia and Lithuania during 2012 are due to the exclusion of data from Parex Bank and AB Ūkio Bankas from the statistics.  
Sources: Eesti Pank, Financial and Capital Market Commission and Lietuvos bankas

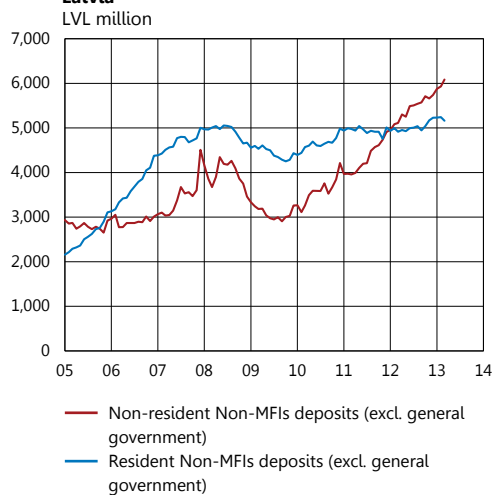
**Chart 3:17. Loan to deposit ratio**  
Per cent



Note. Calculations are based on deposits from and lending to resident households and companies (excluding monetary financial institutions).  
Sources: Eesti Pank, Latvijas Banka, Lietuvos bankas and the Riksbank

<sup>49</sup> Bank of Finland Bulletin 5, 2012, Bank of Finland.  
<sup>50</sup> Monetary Policy Report with Financial Stability Assessment 2013:1, Norges Bank.

**Chart 3:18. Resident and Non-resident deposits in Latvia**



Note. Deposits excluding monetary financial institutions (MFIs) and general government equals deposits from households and companies.

Source: Latvijas Banka

countries will increase somewhat in the period ahead. This relates to the fact that extensive recoveries and reversals of earlier provisions will now begin to decrease (see Chapter 4).

**A large part of the major Swedish banks' lending in Latvia and Lithuania is denominated in euro.**

One reason for this is that it has been more advantageous for the banks to fund lending with the help of market funding in euro than with domestic funding. This in turn has contributed to lending rates for loans in euro being lower than for loans in domestic currencies and the banks' customers have therefore chosen to borrow in euro to a great extent. One effect of this, however, is that the borrowers are exposed to foreign exchange risks as in most cases their incomes are in domestic currencies. The European Systemic Risk Board (ESRB) has therefore recommended that the banks should take the risks that lending in foreign currencies entails into account in their pricing. In addition, the banks' customers should be informed of these risks before they decide to take a loan.<sup>51</sup> Partly as a result of this, the banks are now lending more in their domestic currencies than previously. However, the percentage of loans in euro is still very high in both Latvia and Lithuania. In Latvia, 87 per cent of the lending is in foreign currencies, primarily euro. The corresponding figure in Lithuania is 75 per cent.

**Latvia's objective is to introduce the euro in January 2014.** Such a transition will eliminate a large part of the foreign exchange risk that the Latvian borrowers are exposed to today. In Estonia, lending in foreign currencies has practically ceased since the transition to the euro in 2011. A final decision on whether Latvia will join the EMU is expected in July 2013.<sup>52</sup>

**The inflow of foreign capital to Latvia has continued to increase strongly.** Deposits from households and companies abroad continue to exceed domestic deposits and in March amounted to 53 per cent of the Latvian banks' total deposits (see Chart 3:18). However, banks with Swedish parent companies only receive a limited proportion of the foreign deposits. It is instead mainly Latvian niche banks that have received increased deposits from abroad.

<sup>51</sup> The recommendation is aimed at the national supervisory authorities, who in turn should ensure that the banks comply with the recommendation.

<sup>52</sup> In order to introduce the euro, Latvia must first meet the Maastricht criteria, the so-called convergence criteria.

## ■ 4. Developments in the Swedish banking groups

The profits and profitability of the major Swedish banks have improved over the last six months thanks to increased earnings and continued low loan losses. The banks have also steadily increased their core Tier 1 capital ratios to high levels in international terms. However, the banks have primarily achieved this increase by reducing their risk-weighted assets and only to a limited extent by actually increasing their equity. The low risk weights for the assets of the major Swedish banks mean de facto that their leverage ratio, which is a non-risk-weighted capital ratio, is not higher than the average for European banks. The major Swedish banks currently have good access to wholesale funding. However, as they largely fund their operations on the international capital markets they are still dependent on market confidence and vulnerable to any disruptions on these markets. The structural liquidity risks are also relatively high in the Swedish banks, which is among other things reflected by the low levels in the Riksbank's structural liquidity measure.

### Earnings and profitability

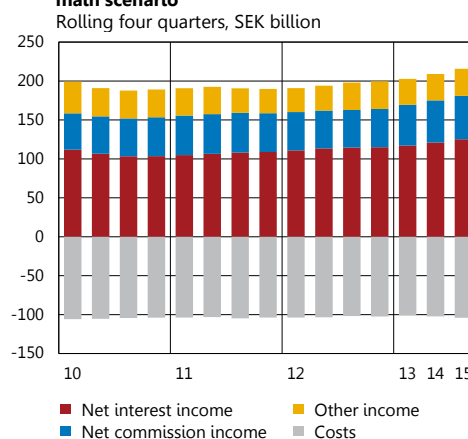
**The major Swedish banks' earnings, that is their profits before loan losses, have increased somewhat over the last six months.**

This is mainly because net interest income has increased (see Chart 4:1). The net interest income has primarily been affected by an increase in deposit and lending volumes. The banks have also generally continued to increase the profit margins on their lending, which means that they have earned more for every krona lent. However, the profit margins on new variable-rate mortgages in Sweden have not increased at the same rate as previously (see Chart 4:2). The banks' lending rates for these mortgages have in principle remained unchanged since the turn of the year while their total funding costs have fallen slightly in the same period. This means that the profit margins for these mortgages have increased only slightly.

**The major banks' earnings have also increased as a result of cost savings.** Several banks have introduced a range of cost-cutting programmes or cost ceilings to improve their profitability. These measures have helped to keep their costs more or less unchanged or even to reduce them slightly in recent quarters. As their incomes have increased, this has also had a positive effect on earnings.

**The profitability of the major Swedish banks is high in an international comparison** (see Chart 4:3). Profitability, measured as return on equity, fell substantially in both Swedish and other European banks following the financial crisis in 2008-2009. However, the earnings of the major Swedish banks have increased since then and their loan losses have also been relatively low. Many European banks, on the other hand, have had considerable loan losses in recent years and have also been forced to make significant write-downs, for example in their government-bond holdings. The relatively high profitability of the major Swedish banks is also one of the reasons why they on average have a higher value on the stock market than both US and other European banks (see Chart 4:4).

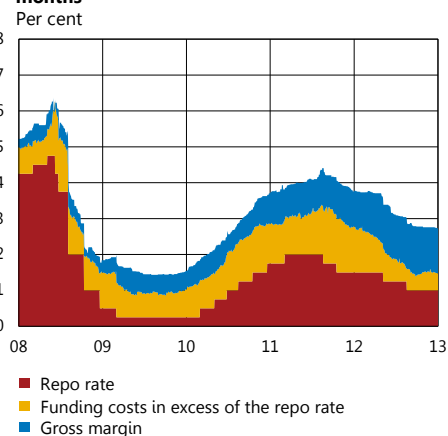
**Chart 4:1. The major Swedish banks' income and costs, and forecast according to the Riksbank's main scenario**



Note. 2013-2015 are forecasts according to the Riksbank's main scenario.

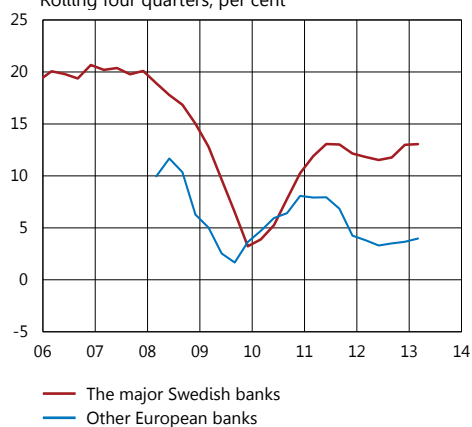
Sources: Bank reports and the Riksbank

**Chart 4:2. Breakdown of interest rates on new mortgages with fixed-interest periods of three months**



Sources: Bank reports, Reuters EcoWin and the Riksbank

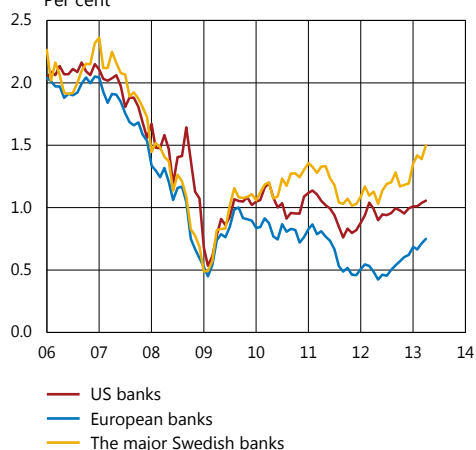
**Chart 4.3. Return on equity**  
Rolling four quarters, per cent



Note. The blue line refers to the mean value for 20 European banks.

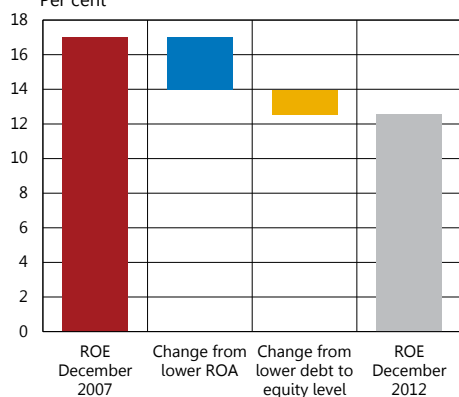
Sources: SNL Financial and the Riksbank

**Chart 4.4. Price-to-book ratio**  
Per cent



Sources: SNL Financial and the Riksbank

**Chart 4.5. The major Swedish banks' return on equity, 2007 and 2012**  
Per cent



Note. Weighted average. ROE = return on equity, ROA = return on assets.

Sources: Bank reports and the Riksbank

**However, the profitability of the major Swedish banks is lower today than in the years prior to the financial crisis.** The main reason for this is that their earnings have not increased at the same rate as their assets. In other words, the return on the banks' total assets is lower today than it was earlier (see Chart 4:5). In addition, the banks have increased the proportion of equity somewhat, which has also reduced their profitability.<sup>53</sup>

**The Riksbank's assessment in the main scenario is that the earnings of the major Swedish banks will increase in the period ahead** (see Chart 4:1). First, the banks' deposit and lending volumes are expected to continue to increase as the economy grows, which means that net interest income will increase. Second, it is expected that economic growth will lead to an increase in the banks' other sources of income, such as net commission income. Third, the banks are also expected to continue to implement their planned cost-saving measures. This means that there will only be a limited increase in their costs.

## Lending and credit risk

**The major banks' lending has increased at a relatively moderate rate over the last six months** (see Chart 4:6). The increase mainly comes from operations in Sweden and the other Nordic countries, where the banks also have the greater part of their lending. Seen over a longer period of time, lending has also increased primarily in Sweden and the other Nordic countries, while lending in countries where the Swedish banks were previously expanding, such as the Baltic countries, has declined (see Chart 4:7).

**The Riksbank's assessment in the main scenario is that the major banks' lending will continue to increase at a moderate rate in the years ahead** (see Chart 4:6). In particular, lending to households in the Nordic countries is expected to increase due to stronger economic growth, rising housing prices and continued low interest rates. In Denmark, however, lending is expected to increase at a lower rate. The banks' lending to non-financial companies is not expected to increase at the same rate as lending to households. The main reason for this is that corporate investment will probably continue to be low. There are also indications that the banks have tightened the standards for loans to companies. The Riksbank also assess that the demand for loans in the Baltic countries will continue to be low.

<sup>53</sup> Profitability is measured as profits after tax in relation to equity.



CREDIT RISK

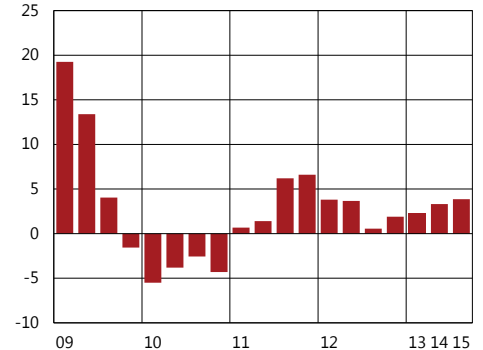
**The loan losses of the major Swedish banks are still at low levels.**

One reason for this is that the banks have continued to roll back earlier provisions as loans losses have not been as high as expected.<sup>54</sup> These roll-backs mainly come from the Baltic countries, where Swedbank and SEB in particular made substantial provisions in 2009 and 2010. Over the last 12 months, the banks total loan losses have amounted to just under SEK 11 billion, which corresponds to 0.15 per cent of their lending to the public. This can be compared with the average loan-loss level of just over 0.20 per cent since the mid-1990s.

**However, loan-loss levels are still high in Denmark and in the shipping sector** (see Chart 4:8). The banks that have the highest lending volumes in these business areas have therefore also suffered the largest loan losses. The loan losses relating to the shipping sector have been affected by the fact that the value of pledged vessels has fallen, which in turn has led to higher provisions. In Denmark, the loan losses mainly stem from lending to non-financial companies that have been affected by the weak development of the Danish economy.

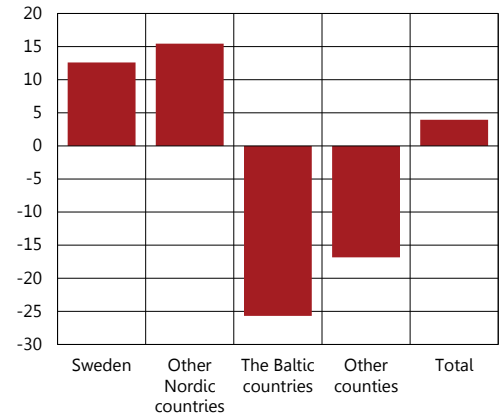
**According to the Riksbank's main scenario, the level of loan losses at the major Swedish banks is expected to remain relatively unchanged in the period ahead** (see Chart 4:9 and Table 4:1). Loan-loss levels are expected to continue to be higher in Denmark than in the other Nordic countries. However, the Riksbank's assessment is that the losses stemming from lending in Denmark will decline as the state of the Danish economy improves. While loan losses are expected to fall somewhat in Denmark, they will probably increase in the Baltic countries. In recent years, the major banks have made substantial recoveries and roll-backs of earlier provisions in the Baltic countries. These have from time to time been even larger than the losses, which has made a positive contribution to the banks' profits. As the recoveries and roll-backs decrease, the loan losses will increase - despite the fact that the debt-servicing ability of the banks' customers has improved. Loan losses in the shipping sector are expected to remain at high levels over the next few years. As approximately half of the major banks' lending to the shipping sector is from their Norwegian operations, this will above all add to loan losses in Norway.

**Chart 4:6. Annual change in the major Swedish banks' lending and forecast according to the Riksbank's main scenario**  
Per cent



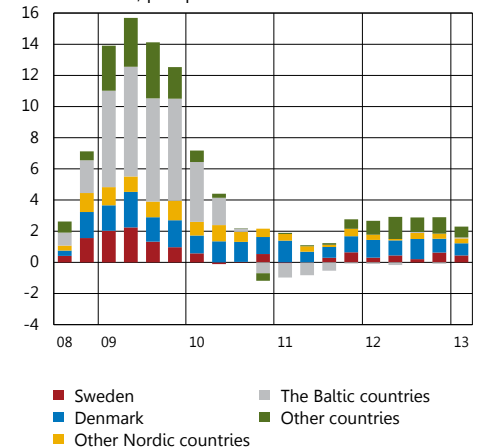
Note. 2013-2015 are forecasts according to the Riksbank's main scenario.  
Sources: Bank reports and the Riksbank

**Chart 4:7. Change in the major Swedish banks' lending volumes between 2009 and 2012**  
Per cent



Note. Refers to the change between December 2009 and December 2012. Does not take into account changes in exchange rates.  
Sources: Bank reports and the Riksbank

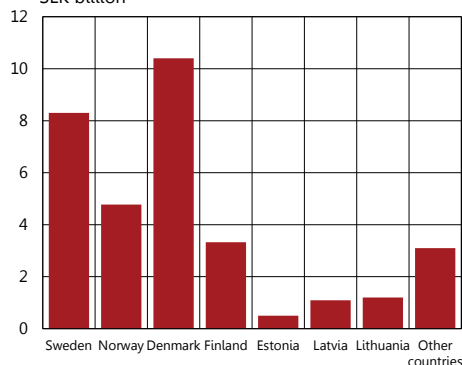
**Chart 4:8. The major Swedish banks' loan losses, geographical distribution**  
SEK billion, per quarter



Note. The largest part of the losses from the shipping segment is included in the category "Other countries".  
Sources: Bank reports and the Riksbank

<sup>54</sup> Loan losses refer to the item on the banks' income statements that in accounting terms is referred to as net credit loss. This item consists of provisions for probable losses, actual losses, the recovery of previous actual losses and reversals of earlier provisions.

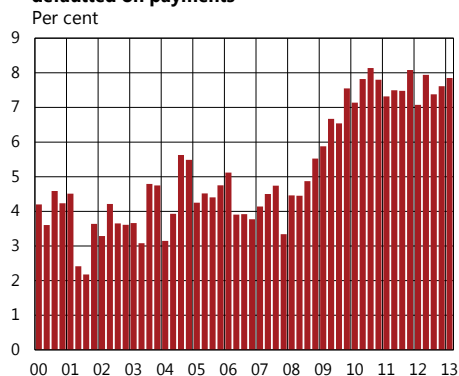
**Chart 4:9. Distribution of the major Swedish banks' loan losses in the main scenario**  
SEK billion



Note. Refers to the period 2013–2015.

Source: The Riksbank

**Chart 4:10. The lowest Tier 1 ratio for one of the major Swedish banks after another major bank has defaulted on payments**  
Per cent



Note: The Tier 1 ratios are calculated in accordance with Basel II transition rules.

Source: The Riksbank

**Table 4:1. Assessment of loan losses in the Riksbank's main scenario**

SEK billion	2013	2014	2015	Total 2013–2015
Handelsbanken	1.5	1.7	1.8	5.1
Nordea	6.8	6.3	6.2	19.2
SEB	1.5	1.6	1.7	4.8
Swedbank	0.9	1.3	1.4	3.7
Total	10.8	10.9	11.2	32.8

Source: The Riksbank

## COUNTERPARTY RISKS

**The direct counterparty risks that arise as a result of the major banks' exposures to each other have lessened somewhat since the previous Financial Stability Report was published.**<sup>55</sup> This is shown by the Riksbank test that assesses the effects of problems at one bank possibly spreading to the other banks. This test measures how much each of the major banks' Tier 1 capital ratios would fall if one of the other major banks were to suspend payments.<sup>56</sup> The test shows that in such a scenario each major bank would still have Tier 1 capital ratios of above seven per cent (see Chart 4:10).<sup>57</sup> The resilience to these risks has improved somewhat because the banks have increased their capital ratios, but also because their exposures to each other have decreased slightly over the last 12 months.

## Capital

**The major Swedish banks have continued to increase their core Tier 1 ratios.** All of the major banks now have CET 1 ratios above ten per cent, which is the minimum level that the Riksbank has recommended the banks to maintain from 1 January this year. The increase in the banks' core Tier 1 ratios in recent years is partly due to the fact that they have increased their equity by retained earnings. However, the largest part of the increase relates to a decrease in risk-weighted assets (see Chart 4:11). As the core Tier 1 capital ratio is a ratio between the banks' core Tier 1 capital and the risk-weighted value of their assets, this means that mainly the denominator in the ratio below has decreased.

### Calculation of core Tier 1 capital ratio

$$\text{Core Tier 1 capital ratio} = \frac{\text{Core Tier 1 capital}}{\text{Risk-weighted assets}}$$

<sup>55</sup> As the banks have substantial loans and commitments to each other there is a risk that problems at one bank may spread to the other banks. This type of risk is called counterparty risk or contagion risk.

<sup>56</sup> The test is based on data on the major banks' fifteen largest counterparty exposures.

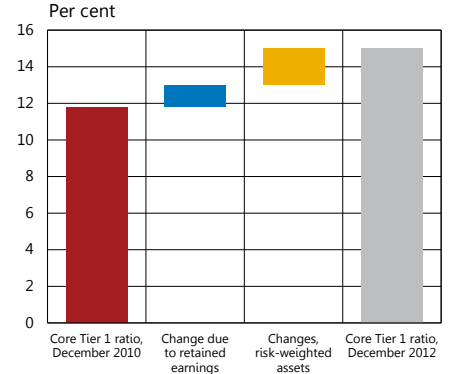
<sup>57</sup> The stress test is a statistical test that only examines the consequences of an isolated event. Consequently, it does not consider the indirect contagion risks that would probably arise in the form of funding difficulties if a Swedish bank were to default on its payments.

**Risk-weighted assets have decreased despite the fact that the major banks' lending has increased** (see Chart 4:12).<sup>58</sup> This is partly because the percentage of high-risk loans has been reduced. Among other things, the proportion of corporate loans, which are normally associated with higher risks, has decreased, while the proportion of mortgages has increased. In addition, a smaller proportion of the banks' lending is now in countries with a higher credit risk, such as the Baltic countries. There are also several other reasons for the decrease in risk-weighted assets. These include the increased use of collateral and new procedures for how the banks carry out risk assessments of their customers.

**An important reason for the decrease in risk-weighted assets is that the banks have begun to use internal credit rating models.** The banks were able to begin using internal credit rating models, so-called IRB models<sup>59</sup>, in 2007 when Basel II came into force in Sweden. Since then, the Swedish banks, following approval from Finansinspektionen, have begun to calculate an increasing proportion of their risk-weighted assets with the help of IRB models. The models are based on the banks' historical loan losses and the risk weights calculated using these models are usually significantly lower than they would be under the standardised approach that is otherwise used. When the banks begin to use internal models, the risk-weighted assets thus decrease in many cases even though the actual credit risk may be unchanged. To the extent that the banks' core Tier 1 capital ratios have improved for this reason, this does not therefore reflect any improvement in their resilience to loan losses. This has also been noted by Finansinspektionen who intend to introduce a floor for risk weights for mortgages as they believe that the low risk weights for Swedish mortgages do not sufficiently capture the actual risks.<sup>60</sup>

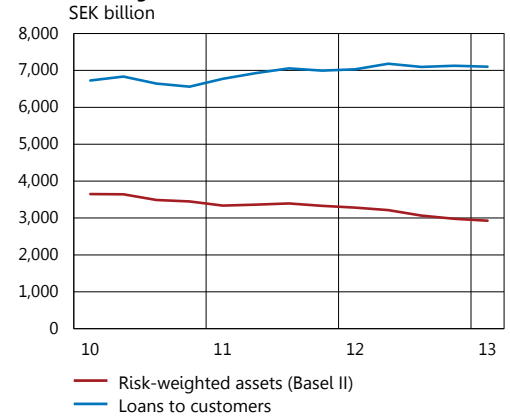
**Despite high core Tier 1 capital ratios, the leverage ratios of the Swedish banks are not higher than the average for other European banks** (see Chart 4:13). The leverage ratio is a non-risk adjusted capital ratio that relates the banks' equity to their total assets.<sup>61</sup> The high core Tier 1 capital ratios of the Swedish banks are thus not a result of their holding more loss-absorbing capital than other banks, but rather a result of the fact that, in general, their assets have low risk weights. The banks' incentives to hold much equity are probably also limited as they above all strive to minimise their total capital costs and thus maximise the profits for their shareholders. This highlights the importance of measuring and

**Chart 4:11. Change in core Tier 1 ratio for the major Swedish banks**



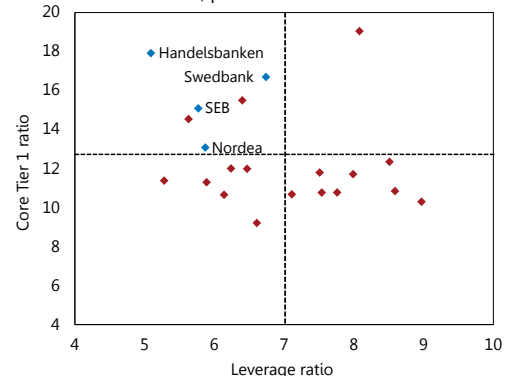
Note. Refers to the weighted average of the major banks' core Tier 1 ratio according to Basel II.  
Sources: Bank reports and the Riksbank

**Chart 4:12. The major Swedish banks' lending and risk weighted assets**



Sources: Bank reports and the Riksbank

**Chart 4:13. Core Tier 1 ratio and leverage ratio December 2012, per cent**



Note. The dashed lines refer to the mean value, the red points show a sample of European banks. The leverage ratio is calculated as shareholders' equity divided by total assets, adjusted for repos, derivatives and insurance assets. The metric is thus not the same as the leverage ratio according to Basel III.

Sources: Liquidatum, SNL Financial and the Riksbank

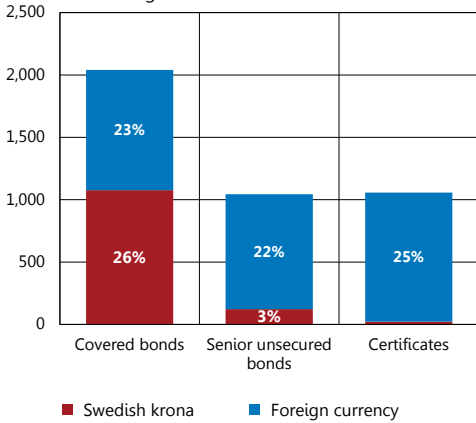
<sup>58</sup> The risk-weighted assets for credit risks constitute approximately 85 per cent of the total risk-weighted assets. A large part of the risk-weighted assets thus come from the banks' lending.

<sup>59</sup> IRB stands for Internal Rating-Based Approach.

<sup>60</sup> Risk weight floor for mortgages, 2012, Finansinspektionen.

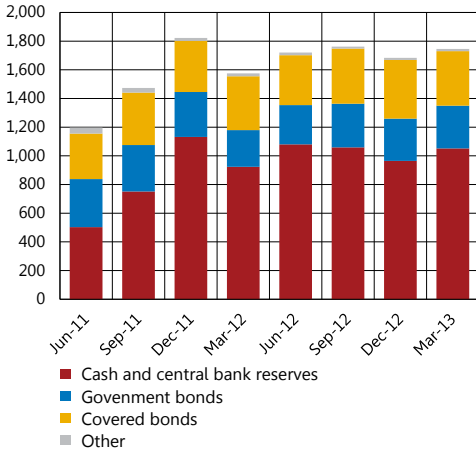
<sup>61</sup> According to the Basel III framework, the leverage ratio is calculated either as core Tier 1 capital in relation to total assets or as Tier 1 capital in relation to total assets.

**Chart 4:14. The major Swedish banks' outstanding issued debt**  
 March 2013, SEK billion and percentage of total outstanding debt



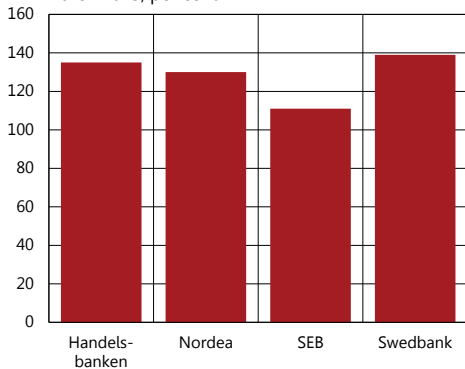
Sources: Bank reports and the Riksbank

**Chart 4:15. The major Swedish banks' liquidity buffers**  
 SEK billion



Sources: Bank reports and the Riksbank

**Chart 4:16. The major Swedish banks' liquidity coverage ratio (LCR)**  
 March 2013, per cent



Note. LCR according to Finansinspektionen's regulations FFFS 2012:6. Does not correspond to the Basel Committee's revised LCR from 2013.

Sources: Bank reports and the Riksbank

regulating the banks' capital with the help of several different measures.

**The reliability of the way in which banks calculate their risk-based capital ratios is currently under discussion at the global level.**

This is because the risk weights tend to vary from bank to bank, despite the fact that their operational areas appear to be similar, and different jurisdictions have chosen to interpret the Basel III Accord in different ways. Authorities and other analysts have therefore questioned whether risk-based capital ratios are comparable between banks and to what extent they reflect the risks in the banks' operations. Consequently, both the European Banking Authority (EBA) and the Basel Committee for Banking Supervision are currently investigating how various banks calculate the risk weights of their assets and whether their methods differ. The Basel Committee has also proposed that a binding minimum requirement for the leverage ratio as a non-risk adjusted measure of capital should be introduced from 1 January 2018.

**Funding and liquidity risks**

**The major Swedish banks fund a large part of their assets through wholesale funding.** Wholesale funding in the form of debt securities is about the same size as the total deposits from the public. This means that the Swedish banks generally differ from foreign banks in that their proportion of deposits is comparatively small.

**A large part of the banks' wholesale funding is in foreign currencies** (see Chart 4:14). The long-term market funding consists of covered and senior unsecured bonds. More than half of these bonds are in foreign currencies, predominantly euro. The short-term market funding mainly consists of bank certificates that are almost exclusively in foreign currencies, above all in US dollar. The banks use funding in foreign currencies to fund both assets in foreign currencies and assets in Swedish krona. The international financial markets are thus important to the Swedish banks' ability to fund their operations (see the Box The major Swedish banks' funding in US dollar). At present, the major Swedish banks have good access to wholesale funding both in Swedish krona and foreign currencies and they are able to issue both bank certificates and bonds at low interest-rate levels (see Chart 2:13 and Chart 2:14).

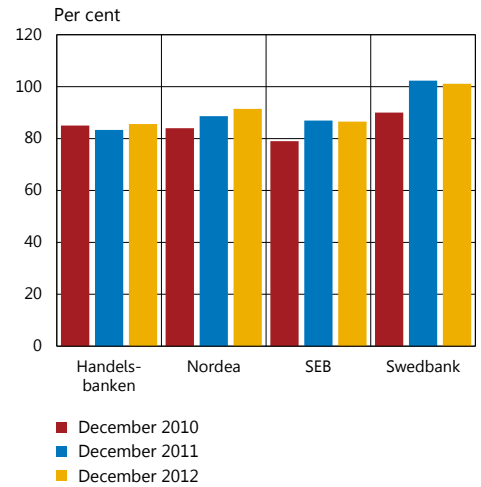
**The major Swedish banks have relatively large liquidity buffers** (see Chart 4:15). One of the reasons for this is that at the turn of the year Finansinspektionen introduced a binding requirement for banks to have a liquidity coverage ratio (LCR) of at least 100 per cent.<sup>62</sup> This requirement means that the banks must be able to cover liquidity outflows in a stressed situation that lasts for 30 days. At the turn of the year, all of the major banks had an LCR that exceeded the minimum level of 100 per cent (see Chart 4:16). Recently it has been both easy and inexpensive for the major Swedish banks to build up liquidity buffers by issuing bank certificates in foreign currencies and then depositing the money in central banks. However, the liquidity buffers consist to a limited extent of securities in Swedish krona.

**If investor confidence in the Swedish banks weakens, it may become more expensive and more difficult to maintain such large liquidity buffers.** Some of the investors that purchase the banks' certificates have occasionally been fickle and withdrawn from the market in periods of financial stress. The propensity to invest has also been affected on other occasions, for example when there have been concerns about downgrades of the banks' credit ratings. There is now also a surplus of liquidity in both the euro area and the United States as a result of the central banks' extraordinary measures. When this surplus decreases, it may also become generally more difficult for banks to maintain such large liquidity buffers.

**The banks' structural liquidity risks are still high** (see Chart 4:17). This is shown by the Riksbank's structural liquidity measure, which measures the proportion of stable funding in relation to the illiquid assets.<sup>63</sup> The comparatively low levels in the structural liquidity measure partly relate to the fact that the Swedish banks have relatively low proportions of deposits and therefore use wholesale funding, some of which is at short maturities, to a great extent. The banks also have a large proportion of illiquid assets in the form of long-term loans on their balance sheets. However, seen over a longer period of time the major Swedish banks have improved their results in the structural liquidity measure somewhat, which is mainly due to the fact that they have extended the maturity of their wholesale funding and thus increased the proportion of stable funding (see Chart 4:18).<sup>64</sup>

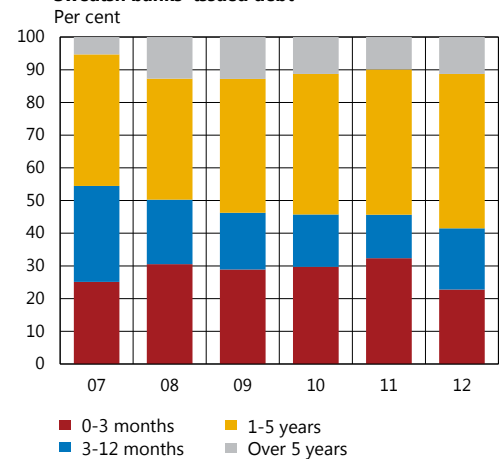
<sup>62</sup> According to Finansinspektionen's regulations, (2012:6) the banks should have a liquidity coverage ratio of at least 100 per cent at every turn of the month. This requirement applies both totally and separately for euro and US dollar. The requirement is based on the Basel Committee's LCR proposal from December 2010 and thus does not correspond to the Basel Committee's revised LCR from 2013.  
<sup>63</sup> The structural liquidity measure is conceptually similar to the Basel Committee's liquidity measure, the Net Stable Funding Ratio, but is only based on public information. The results are therefore not entirely comparable. For further information on the Riksbank's liquidity measure, see Method for stress testing the banks' liquidity risks, article in *Financial Stability Report 2010:2*. Sveriges Riksbank.  
<sup>64</sup> From 2007 to 2010 the major banks' aggregate results in the structural liquidity measure improved by eight percentage points.

**Chart 4:17. The Riksbank's structural liquidity measure**



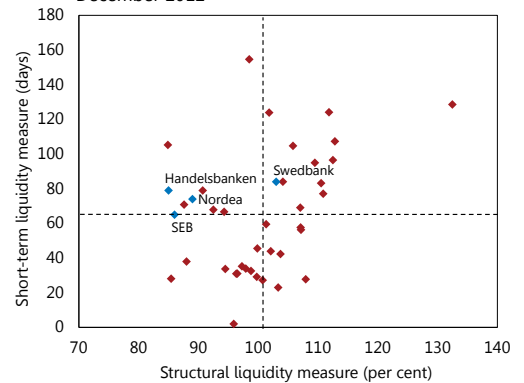
Note. For a detailed description of the Riksbank's structural liquidity measure, see *Financial Stability Report 2010:2*.  
 Sources: Liquidatum and the Riksbank

**Chart 4:18. Maturity distribution of the major Swedish banks' issued debt**



Note. Refers to remaining maturity as of 31 December each year.  
 Sources: Liquidatum and the Riksbank

**Chart 4:19. The Riksbank's short-term and structural liquidity measures**  
 December 2012



Note. The dashed lines show the mean value, the red dots illustrate a group of 36 European banks.  
 Sources: Liquidatum and the Riksbank

**The resilience of the major banks to short-term liquidity risks is good in an international comparison, but their resilience to structural liquidity risks is weaker** (see Chart 4:19). In the Riksbank's short-term liquidity measure, the major Swedish banks have had somewhat better results than the mean value for a sample of European banks. This indicates that their resilience to short-term liquidity risks is relatively high.<sup>65</sup> However, in the structural liquidity measure the major Swedish banks have lower results than most of the other banks in the sample.

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<sup>65</sup> The Riksbank's short-term liquidity measure measures how well the banks' liquidity buffers would cover liquidity outflows in a stressed situation lasting three months.

# The major Swedish banks' funding in US dollar

**This article describes how funding in foreign currencies is conducted, how it is used and what the associated risks are. Although the banks' funding in foreign currencies gives them access to diversified funding, it also entails liquidity risks. It would also be difficult to issue the same volumes of funding in Swedish krona as at present there is no liquid money market in Sweden. The description only deals with borrowing in US dollar as this is the currency that both Swedish and other European banks found it most difficult to borrow in the period 2008-2009. Therefore, the article does not provide a complete picture of the banks' liquidity risk in foreign currencies. However, the analysis and the conclusions can largely be said to apply to other foreign currencies too, for example the euro.**

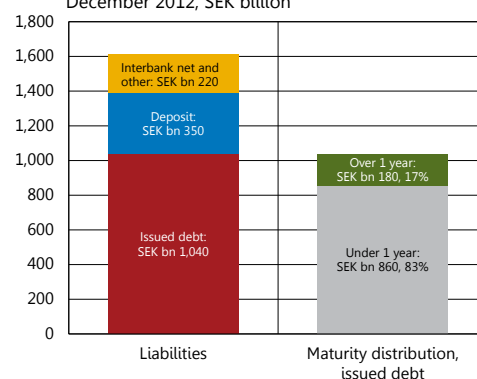
The major Swedish banks' liabilities<sup>66</sup> in US dollar amounted to just over SEK 1,600 billion at the end of 2012. Approximately 20 per cent of these liabilities consist of deposits, above all from large non-financial and non-bank financial companies. The remainder consists of issued securities and of funding from other banks and financial institutions. Almost 85 per cent of all issued securities have a maturity of less than one year (see Chart B4:1). Put simply, the borrowing in dollar is used in three different areas by the banks: building up liquidity buffers, long-term lending to companies and the funding of assets in other currencies through so-called currency swaps.

## *The banks invest part of their borrowing in liquidity buffers*

At the end of 2012, the banks used just over a third of their liabilities in dollar, a sum equivalent to approximately SEK 600 billion, to build up liquidity buffers (see Chart B4:2). These buffers primarily consist of deposits in the US central bank, the Federal Reserve. This means that the banks quickly can obtain access to liquid funds in dollar should the need arise. However, the buffers are funded by borrowing at relatively short maturities (see Chart B4:3).<sup>67</sup> This in turn means that the banks have access to their liquidity for only a few months at most before they have to use it to repay their investors. The part of the dollar funding which is invested in liquidity buffers can thus be seen as a buffer designed to cover the need for liquidity during relatively brief periods of stress.

**Chart B4:1. The major Swedish banks' liabilities in US dollar**

December 2012, SEK billion

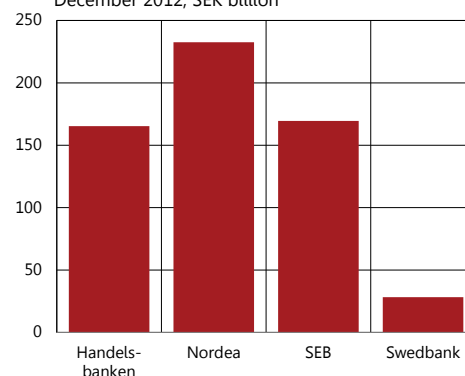


Note. Interbank net refers to the banks having more borrowing from other banks than lending.

Sources: Bank reports and the Riksbank

**Chart B4:2. The major Swedish banks' liquid assets in US dollar**

December 2012, SEK billion

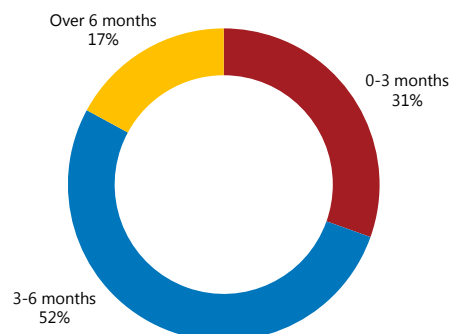


Note. Liquid assets refer to holdings in central banks and interest-bearing securities.

Sources: Bank reports and the Riksbank

**Chart B4:3. Maturity for the major Swedish banks' issued bank certificates in US dollar**

December 2012, per cent



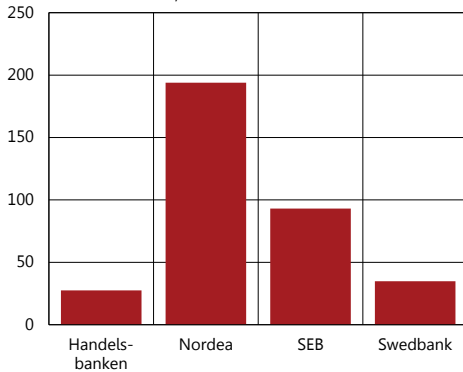
Sources: Bank reports and the Riksbank

<sup>66</sup> The terms borrowing, funding and liabilities are used synonymously in the Box.

<sup>67</sup> Here it is assumed that the short-term funding is primarily used to fund liquid assets.

**Chart B4:4. The major Swedish banks' illiquid assets in US dollar**

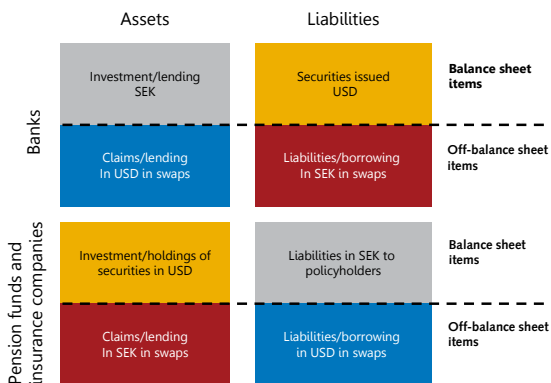
December 2012, SEK billion



Note. About 75 per cent of the lending has a remaining maturity of more than one year.

Sources: Bank reports and the Riksbank

**Chart B4:5. Hypothetical balance sheets of banks, pension and insurance companies after a currency swap**



Source: The Riksbank

### *The banks lend US dollar to companies at long maturities*

At the end of 2012, the banks used approximately SEK 350 billion of their borrowing in dollar to fund lending in dollar to companies (see Chart B4:4). This applies mostly to large companies operating in sectors that traditionally have strong links to the dollar, for example shipping. There are also many multinational companies that require dollar.

It is therefore also important to the companies that the banks have access to dollar, as it is the banks that supply the companies with foreign currencies.

### *The banks exchange some of their funding in dollar for other currencies*

The Swedish banks' dollar assets in the form of liquid funds and lending to companies amounts to SEK 950 billion.<sup>68</sup> At the same time, their liabilities in dollar are equivalent to SEK 1,610 billion. Their remaining liabilities, equivalent to SEK 660 billion, are not invested in dollar assets. The banks instead exchange these dollar for other currencies on the currency swap market.<sup>69</sup>

The counterparties in these transactions may be non-financial companies, banks or other financial companies (usually Swedish pension companies and insurance companies). These companies have liabilities to savers and insurance holders in Swedish krona, but want to hold some of their assets in dollar to spread their risks.<sup>70</sup> To be able to buy dollar assets without taking currency risk, they first need to borrow dollar, which they do by entering into currency swaps with the banks.<sup>71 72</sup>

In a currency swap, the bank and the pension company or insurance company swap currencies with each other. The pension or insurance company receives dollar from the bank and the bank receives Swedish krona from the pension or insurance company. At the same time, the parties enter into an agreement on a transaction in the future in which the pension or insurance company promises to repay dollar to the bank and the bank promises to pay krona. The currency swap thus enables the pension or insurance company to match its assets and liabilities with the right currency and thereby manage its currency risk (see Chart B4:5).

In order for the Swedish banks to be able to lend dollar through currency swaps, they first have to borrow these dollar on the market, usually by issuing short-term securities in dollar. Consequently, the

<sup>68</sup> SEK 600 billion in liquid assets and SEK 350 billion in illiquid assets.

<sup>69</sup> The major banks exchange dollar in currency swaps, normally for Swedish krona, other Nordic currencies or euro. This article only deals with that part of dollar borrowing that is swapped for krona.

<sup>70</sup> The pension and insurance companies also hold other foreign currencies in addition to dollar.

<sup>71</sup> The pension and insurance companies can exchange krona for dollar on the spot market without entering into a currency swap, but they then expose themselves to currency risks as their assets are in dollar and their liabilities in krona.

<sup>72</sup> For more detailed information on currency swaps see Eklund, Johanna, Milton, Jonas and Rydén, Anders, Swedish banks' use of currency swaps to convert borrowing in foreign currencies to Swedish krona, *Sveriges Riksbank Economic Review 2012:2*, Sveriges Riksbank.



banks' "surplus funding" in dollar serves two purposes: first it gives the pension and insurance companies the dollar they need to be able to buy dollar assets without taking currency risk and, second, it gives the Swedish banks access to krona that they can lend to other borrowers or invest in Swedish assets.

*Effective dollar funding is important to banks, pension and insurance companies and other companies*

The banks' borrowing in dollar is thus primarily used for three purposes (see Chart B4:6). By investing their borrowing in liquid dollar assets, the major banks build up their resilience to short-term liquidity stress. In addition, the banks borrow money to lend to non-financial companies that wish to borrow dollar. The investment needs of the pension and insurance companies are also one of the driving forces behind the banks' funding in dollar as they seek to acquire dollar through currency swaps. It should also be pointed out, however, that by exchanging dollar for krona in such swaps with the pension and insurance companies, the banks generate funding in Swedish krona which since 2008 has led to lower funding costs than they would have had if they had borrowed krona directly on the Swedish market (see Chart B4:7). All in all, access to effective markets in dollar is thus important to the banks but also to the pension and insurance companies and other companies.

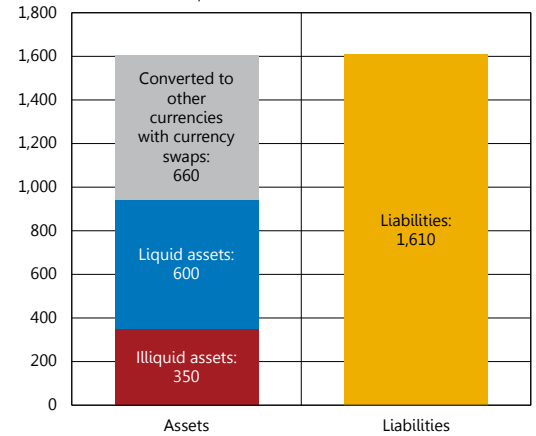
*Funding in dollar creates risks*

As the Swedish banks are active on international markets it is not particularly surprising that they use funding in foreign currencies to such a large extent. This gives them access to diversified funding. However, funding in foreign currencies also entails risks that it is important to be aware of.

*Lending to companies gives rise to liquidity risks in foreign currencies*

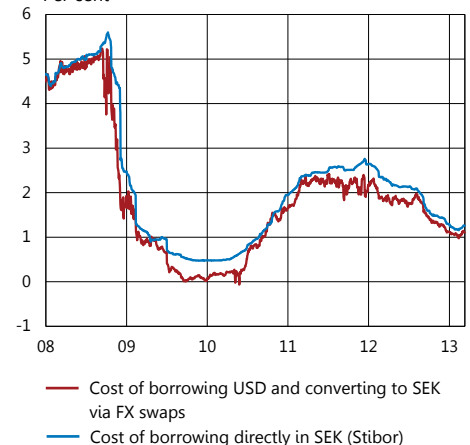
The most obvious risk is that the banks are exposed to liquidity risks in foreign currencies. These risks mainly arise in connection with lending to large companies. In most cases this lending is at long maturities and is thus illiquid for the banks. In order for the banks not to be exposed to liquidity risks, the lending must therefore be funded by stable deposits or long-term market funding. Swedish banks have illiquid assets in dollar to a total value of around SEK 350 billion. Put simply, this is funded through deposits and long-term market funding. The long-term market funding only amounts to around SEK 180 billion, however (see Chart B4:1).<sup>73</sup> This so-called maturity

**Chart B4:6. The major Swedish banks' assets and liabilities in US dollar**  
December 2012, SEK billion



Sources: Bank reports and the Riksbank

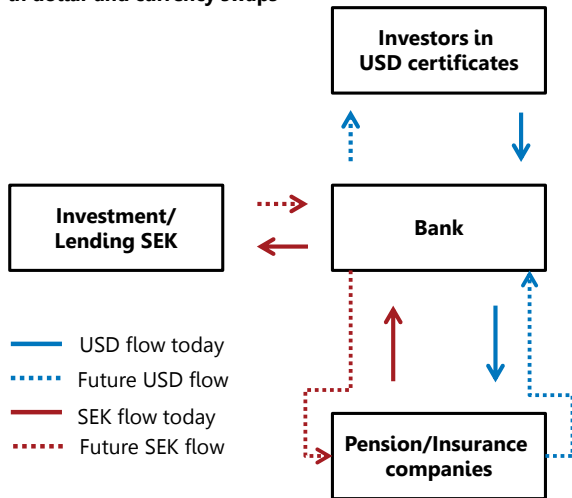
**Chart B4:7. Cost for SEK funding**  
Per cent



Source: Bloomberg and the Riksbank

<sup>73</sup> The long-term foreign market funding in dollar can also be used to fund lending in other currencies through currency swaps.

**Figure B4:1. Flows in connection with the issue of securities in dollar and currency swaps**



transformation is a natural part of a bank's operations, but entails particular risks when it is conducted in foreign currencies. This is because the Riksbank cannot assist the banks with unlimited liquidity support in US dollar in the event of funding problems. A liquidity crisis in US dollar may therefore quickly develop into a broader financial crisis resulting in major costs to society. One of the reasons the Riksbank maintains a foreign exchange reserve in various currencies is to avoid such a scenario.

### *The part of funding that is swapped for SEK entails other types of risk*

Under normal circumstances, that part of funding in foreign currencies that is used to fund assets in Swedish krona through currency swaps does not give rise to liquidity risks in foreign currencies. This is because when the time comes for the banks to repay dollar to those who have invested in their issued securities the banks get back the same amount of dollar from their counterparty through the currency swap (see Figure B4:1).<sup>74</sup> This is not therefore as problematic from the point of view of the economy as a whole.

However, this does not mean that this part of funding does not entail any problems. First, currency swaps give rise to counterparty risks between the banks and their counterparties, above all the pension and insurance companies. Second, it is not realistic to believe that short-term securities borrowing in foreign currencies that have been swapped for krona can easily be replaced by borrowing directly in krona as at present there is no liquid money market in Sweden.

### *The banks' liquidity buffers will probably decrease in the longer term*

As mentioned above, the Swedish banks have built up large liquidity buffers in recent years. In the short term they have therefore improved their resilience to liquidity risks. However, these large buffers, which amounted to approximately SEK 600 billion at the end of December 2012,<sup>75</sup> are partly a result of the fact that the Swedish banks have had favourable borrowing costs in recent years and have therefore been able to build up buffers at practically no cost. It is not likely, however, that they will be able to maintain such large liquidity buffers when their funding costs return to more normal levels and the Federal Reserve no longer offers such a favourable interest rate for investments. The banks' resilience to short-term stress will thus probably weaken in the period ahead.

<sup>74</sup> However, if the banks want to continue to supply the pension and insurance companies with dollar they will need to be constantly able to borrow dollar.

<sup>75</sup> By comparison, the banks' liquid assets in dollar corresponded to SEK 200 billion in December 2010.

## Appendix: Stress test of the banks' capital ratios

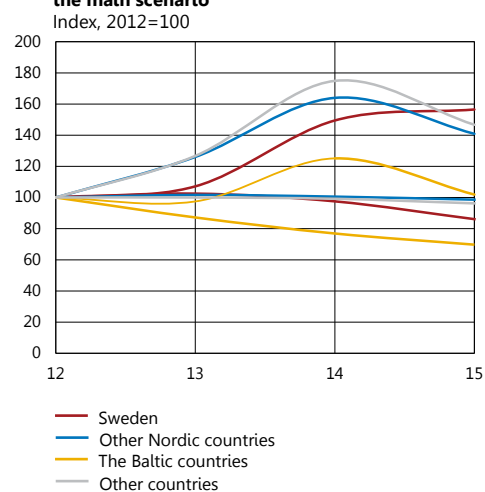
The Riksbank's stress test of the Swedish major banks' capital ratios shows that the banks' total loan losses in the event of a serious deterioration in the development of the macro economy in the period 2013 – 2015 would reach an estimated SEK 267 billion. The loan losses in the stress test are largely counteracted by the banks' strong earnings and thus have only a marginal effect on the banks' capital ratios. This indicates that the banks are highly resilient to a serious weakening of the macro economy. This Appendix presents the results of the stress test as well as the scenarios on which the stress test is based. The Appendix also presents the method the Riksbank uses in its stress tests.

*The stress test of the major banks' capital ratios indicates high resilience*

The macroeconomic assumptions in the stress test are much weaker than in the main scenario.<sup>76</sup> In the Riksbank's main scenario, the rate of GDP growth increases in the years ahead and unemployment falls. The profits of the major banks before loan losses are expected to increase and the assessment is that loan losses will be moderate during the forecast period (see Chapter 1). However, this course of development is associated with significant risks. The stress-test should be seen as a possible development of the macro economy given that one or more of the risks identified in Chapter 1 are realised. In the stress test, it is assumed that GDP will fall, in some cases substantially, and that unemployment will increase (see Table A:1 and Chart A:1). At the same time, interbank rates increase as a result of higher risk premiums (see Table A:2).<sup>77</sup> It is also assumed that housing prices will fall both in Sweden and in other countries where the major Swedish banks have exposures. The fall in housing prices is greatest at the end of the period, when it is assumed the prices will have fallen by 20 per cent.

The stress scenario can be seen as a possible development of the macro economy if, for example, unease about public finances in the euro area deepens. This could lead to falling aggregate demand, and consequently falling GDP, for several years. This would have a negative impact on corporate profits, resulting in an increase in expected default frequency and higher unemployment. It could also lead to a higher level of credit risk, rising risk premiums and increased stress on the financial markets, resulting in higher interbank rates and higher funding costs for the banks.<sup>78</sup> This in turn would lead to higher interest rates for the Swedish banks' borrowers. Higher interest rates could also be expected to reduce the demand

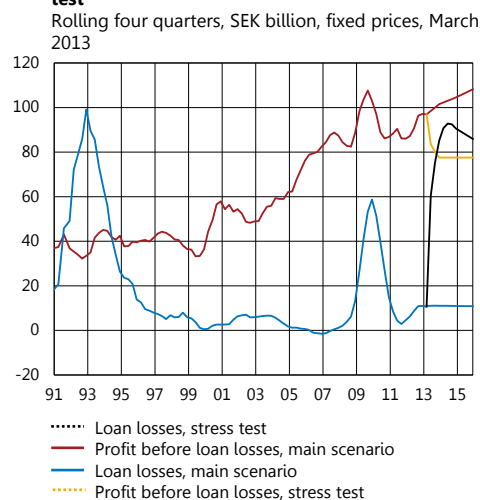
**Chart A:1. Unemployment in the stress test and in the main scenario**



Note. Dashed lines represent the development of unemployment in the main scenario. The other Nordic countries refers to Norway, Denmark and Finland. Other countries refers to the UK and Germany.

Source: The Riksbank

**Chart A:2. Profit before loan losses and loan losses in the major Swedish banks, according to the stress test**



Sources: Bank reports and the Riksbank

<sup>76</sup> The development of GDP, interest rates and unemployment are based on the EBA's stress test scenarios from 2011.

<sup>77</sup> Using interbank rates instead of government lending rates means that the results of this stress test are not entirely comparable with the results in the previous report.

<sup>78</sup> In the stress test, changes in interbank rates are used as indicators of changes in the banks' funding costs.

for loans, which in turn would lead to a fall in housing prices as prices would adjust to the new, higher lending rates. Such a situation would further undermine the companies' potential profits, partly because their interest costs would be higher and partly because the demand for their goods would weaken when households cut back their consumption in order to be able to cope with the higher mortgage costs.

**Table A:1. GDP in the stress test and in the main scenario**

Annual percentage change	2013	2014	2015
Sweden	0.0 (1.4)	-2.5 (2.9)	-2.7 (3.2)
Nordic countries excluding Sweden	-3.7 (0.5)	-3.9 (1.5)	-1.9 (1.7)
Baltic countries	-0.1 (4.0)	-6.6 (3.5)	-6.2 (3.7)
Other countries	-5.2 (0.4)	-5.5 (1.2)	-2.7 (1.6)

Note. The figures in parentheses are the GDP forecasts in the main scenario. Other Nordic countries refer to Denmark, Finland and Norway. Other countries refer to Germany and the United Kingdom. Source: The Riksbank

**Table A:2. Three-month interbank rates in the stress test and in the main scenario**

Per cent	2013	2014	2015
Sweden	3.3 (1.2)	5.8 (1.4)	3.7 (2.2)
Nordic countries excluding Sweden	2.7 (0.9)	4.4 (1.1)	2.8 (1.5)
Baltic countries	2.6 (0.6)	5.5 (1.0)	3.6 (1.2)
Other countries	1.5 (0.3)	2.7 (0.4)	1.1 (0.7)

Note. The figures in parentheses refer to the development of interest rates in the main scenario. Other Nordic countries refer to Denmark, Finland and Norway. Other countries refer to Germany and the United Kingdom. Source: The Riksbank

**All in all, the stress test scenario implies that the major Swedish banks' total loan losses in 2013–2015 will amount to SEK 267 billion** (see Chart A:2 and Table A:3). Approximately SEK 21 billion of these losses relate to the direct effects of falls in housing prices in countries where the major Swedish banks operate. However, the largest losses stem from lending to Swedish non-financial companies and lending in the Baltic countries as these groups of borrowers are hit hardest by the weakening of economic activity (see Table A:3). The loan losses lead to a reduction in the banks' CET 1 ratios but the banks remain relatively well capitalised after three years of stress (see Chart A:3).<sup>79</sup> An important reason why the banks' capital ratios are only affected to a limited extent by the loan losses in the stress test scenario is that the banks show good profits before loan losses even in the stress test. (see Chart A:4). The results of the stress test should be viewed in the light of how the composition of the banks'

<sup>79</sup> In order to calculate the banks' capital ratios in the stress test, the Riksbank makes the following assumptions: (1) the banks' risk-weighted assets increase by five per cent per year; (2) the banks pay no dividends and conduct no share repurchases; (3) the banks do not try to reduce their risk-weighted assets, bring in new capital or change their operations in any other way; (4) one of the respective bank's largest counterparties, measured in terms of the amount loaned, suspends payments. As Finansinspektionen's proposal to increase risk weights for Swedish mortgages will be regarded as a Pillar 2 requirement, no assumptions concerning increased risk weights for Swedish mortgages are made in this stress test.

portfolios has changed since the recent financial crisis. Today, the major banks are less exposed to groups of borrowers that carry a high credit risk, at the same time as their core Tier 1 capital ratios have developed positively in recent years.<sup>80</sup> A development of the macro economy similar to that used in the stress test would therefore probably have led to considerable problems for the banks if the same stress test had been applied to their situation in 2007. This indicates that the banks' resilience has improved since the latest financial crisis.

**The results of the stress test are based on the assumption that the banks' profits before loan losses fall by 20 per cent compared to the banks' published profit figures for 2012.** Given this assumption, the stress test takes account of the fact that the banks cannot always pass on all of the increase in funding costs to their borrowers, as well as the fact that the banks' net commission income can be expected to fall in connection with a development of the economy like the one assumed in the stress test. However, it is difficult to precisely calculate how the banks' profits would have been affected if the actual development had been in line with the stress scenario. The stress test is therefore complemented by a simple sensitivity analysis that investigates what the effects of various assumptions about a percentage reduction of the banks' profits before loan losses would be on their CET 1 capital ratios. This sensitivity analysis shows that the banks remain well-capitalised even in the case of a stricter assumption about the banks' profits before loan losses (see Chart A:5).

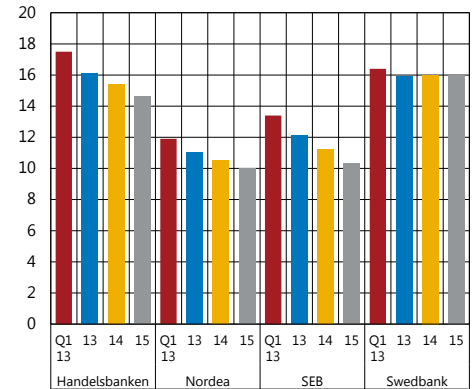
**Table A:3. The major Swedish banks' loan losses in the stress test**

Percentage of total lending for each borrower category and for each country

		2013	2014	2015	Total during the period
Sweden	Non-financial companies	2.7	2.9	2.7	2.8
	Property companies	1.1	1.3	1.2	1.2
	Housing cooperatives	0.7	0.8	0.8	0.8
	Financial companies	0.4	0.4	0.4	0.4
	Households	0.4	0.4	0.4	0.4
Sweden total		0.9	0.9	0.9	0.9
Other Nordic countries		1.4	1.5	1.4	1.4
Baltic countries		2.4	2.6	2.5	2.5
Other countries		2.0	2.1	2.0	2.0
Total		1.2	1.2	1.2	1.2
<b>Total loan losses (SEK billion)</b>		86	93	89	267

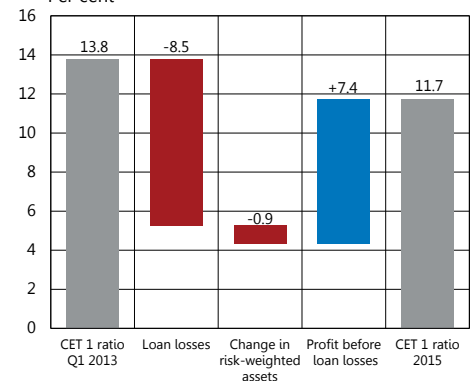
Source: The Riksbank

**Chart A:3. CET 1 ratios according to Basel III, initially and in the stress test**  
Per cent



Note. The CET 1 ratios are the Riksbank's own estimates based on full implementation of the Basel III Accord.  
Sources: Bank reports and the Riksbank

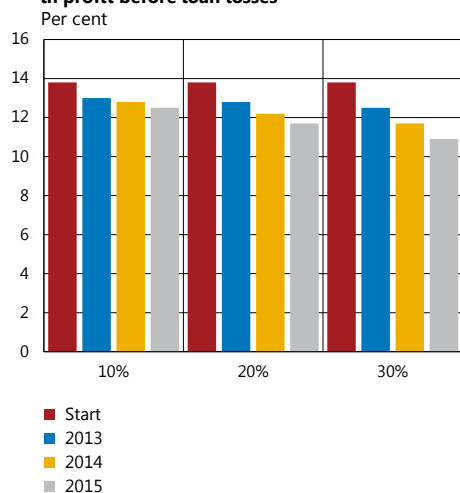
**Chart A:4. Changes in the major Swedish banks' CET 1 ratios in the stress test**  
Per cent



Note. The CET 1 ratios are stated according to the Riksbank's own calculations in accordance with the Basel III Accord.  
Source: Bank reports and the Riksbank

<sup>80</sup> See *Financial Stability Report 2007:1*.

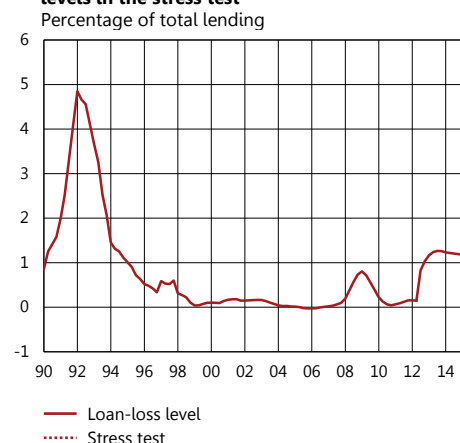
**Chart A:5. Weighted mean values for the major Swedish banks' CET 1 ratios, initially and in the stress test, given different assumptions about a fall in profit before loan losses**



Note. The CET 1 ratios are the Riksbank's own estimates based on full implementation of the Basel III Accord.

Sources: Bank reports and the Riksbank

**Chart A:6. The major Swedish banks' loan-loss levels in the stress test**



Note: Calculated from rolling annual loan losses, four quarters.

Sources: Bank reports and the Riksbank

## Description of method

**The purpose of the stress test is to examine the banks' resilience to different types of macroeconomic shock.** More precisely, the stress test tests to what extent the major Swedish banks have adequate capital to manage the loan losses that can be expected to arise in the event of a severe deterioration in economic activity. This is done by linking data from the banks' reports to the macroeconomic development in the stress test using econometric models. The calculation method entails two steps. In the first step, the four major banks' loan losses are calculated at the group level on the basis of the macroeconomic scenario in the stress test. In the second step, the total losses of the banking groups are broken down as per the banks' different groups of borrowers.<sup>81</sup>

**In the first step of the method, the level of loan losses in the stress test scenario is calculated on the basis of loan-loss data for the period 1992–2012.** In this calculation, time series for domestic and foreign GDP and domestic and foreign interbank rates are used as explanatory macroeconomic variables.<sup>82,83</sup> Table A:4 shows the average effect of the different macroeconomic variables on the level of the banks' loan-losses at the group level. In the current stress test, it is calculated that the banks' loan-loss levels as a result of the development of the macro economy will amount to 1.2 per cent of total lending at the end of 2015 (see Chart A:6). The banks' total loan losses are calculated by multiplying the banking groups' loan-loss levels by their exposures.

**Table A:4. The effect of the macroeconomic variables on the banks' loan-loss levels**

Variable	Effect
<i>Swedish GDP</i> <sub>t-1</sub>	-
3M STIBOR <sub>t</sub>	+
3M STIBOR <sub>t-1</sub>	-
<i>Exposure weighted GDP</i> <sub>t</sub>	-
<i>Exposure weighted 3M interbank rate</i> <sub>t,t-1</sub>	+
<i>Exposure weighted 3M interbank rate</i> <sub>t-1</sub> <sup>2</sup>	-

Note. GDP in this table refers to annual GDP growth.

Source: The Riksbank

**In a second step, the total losses of the banking groups are broken down as per the banks' different groups of borrowers.** This provides an indication of how much the different groups of

<sup>81</sup> Statistical tests show that this method has a good predictive ability.

<sup>82</sup> The level of loan losses is calculated using a dynamic panel data model. The foreign variables are weighted in the model in relation to the share of exposures the respective banks have to the different countries. This weighting makes it possible to take account of the fact that the major Swedish banks are affected to different degrees by fluctuations in economic activity in different countries.

<sup>83</sup> The economic specification in the model contains constant bank-specific effects and is estimated in rates of change. As the Swedish banks have substantial foreign exposures, the model also takes account of the historical differences in the banks' exposures by allowing the banks' loan-loss levels to vary in line with exposure-weighted macroeconomic variables. The exposure-weighted macroeconomic variables are calculated for each major bank (i) and quarter (t) using the following equation:  $X_{i,t} = \sum_j \omega_{i,j,t} \times x_{j,t}$  in which the weight  $\omega_{j,t}$  is the ratio between the bank's exposures to country j and the total of the bank's exposures to the panel of countries used in the stress test, excluding Sweden.

borrowers contribute to the loan losses (see Table A:3). The breakdown of loan losses between the different groups is based on models of the groups' expected default frequency.<sup>84</sup>

**The effects of a fall in housing prices are also analysed in the stress test.** This analysis is based on the assumption that the banks' losses increase in proportion to the extent of the fall in housing prices if the households are unable to pay their mortgage costs. This relation is in turn based on the assumption that a fall in the value of the collateral the banks have for their mortgage lending entails larger losses for the banks if the mortgage holders fail to service their debts. In the current stress test, for example, it is assumed that housing prices fall by 20 per cent, which in combination with the stress-test scenario of weaker macroeconomic development leads to an increase in the banks' loan losses of SEK 21 billion (see Chart A:7).

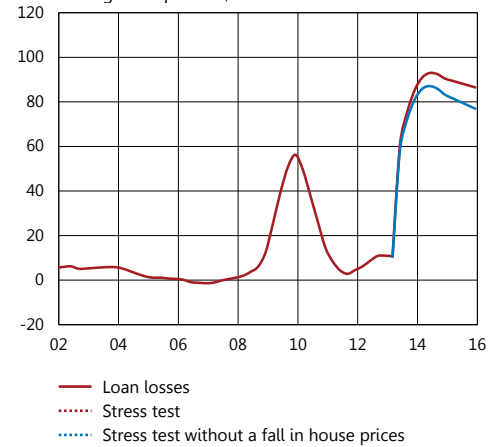
**The calculated loan losses are highly uncertain and only reflect the expected outcome given the empirical relations that have been observed to date.** Historical experience shows that empirical relations that apply in good times do not necessarily apply in times of crisis. In order to illustrate this, the stress test is complemented by a simple sensitivity analysis in which the effect of the macroeconomic scenario on the loan losses differs from the historically-estimated relation. Chart A:8 shows the major Swedish banks' loan losses in the current stress test together with a calculated uncertainty interval. In the upper part of the uncertainty interval the total loan losses amount to SEK 425 billion during the period 2013–2015, which is SEK 158 billion more than the calculated loan losses in the stress test.

**The banks' access to market funding may deteriorate if there is a substantial increase in loan losses.** Even though the losses in the test do not lead to any major decrease in the banks' core Tier 1 capital ratios, there is a substantial fall in the banks' profits compared to the main scenario. This increases the risk of their credit ratings being downgraded. A lower credit rating may in turn mean that some investor categories may no longer be able to purchase a bank's securities as they are only permitted to invest in securities with a higher credit rating.

**The stress test does not capture the contagion risks in the Swedish banking system.** The test does not capture the fact that the risks in the banking system as a whole may be greater than is apparent from the results for the individual banks. For example, it is likely that if a bank suffers large losses this will affect confidence in all the banks in the system.

<sup>84</sup> Expected default frequency for the non-financial companies is estimated on the basis of a vector autoregressive panel data model that is linked to the macroeconomic development in the stress test. The expected default frequency for households is estimated in line with the development of unemployment. The development of expected default frequencies for the other groups of borrowers is estimated in line with that for the non-financial companies.

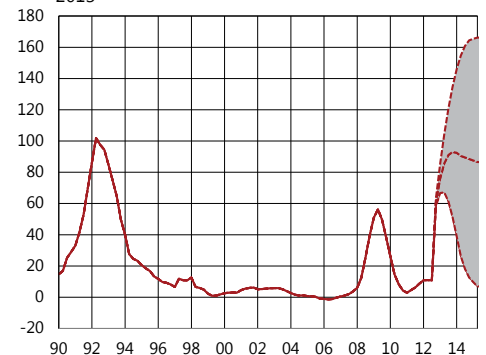
**Chart A:7. The effect of a house price fall of 20 per cent on the major Swedish banks loan losses**  
Rolling four quarters, SEK billion



Note: Linear house price fall in nine countries. House prices reach their minimum at the end of 2015.

Sources: Bank reports and the Riksbank

**Chart A:8. The major banks' loan losses in the stress test with an calculated uncertainty band**  
Rolling four quarters, SEK billion, fixed prices, March 2013



Note. The broken line refers to the Riksbank's estimate of the banks' expected loan losses given the macroeconomic scenario in the stress test. The grey field represents a 75 per cent uncertainty interval.

Sources: Bank reports and the Riksbank

**Table A.5. Profits and capital ratios in the stress test**

SEK billion and per cent

	Handelsbanken			Nordea			SEB			Swedbank		
	2013	2014	2015	2013	2014	2015	2013	2014	2015	2013	2014	2015
Profit before loan losses	14.6	14.6	14.6	34.3	34.3	34.3	12.2	12.2	12.2	16.0	16.0	16.0
Loan losses	-17.3	-18.3	-17.9	-39.2	-41.0	-39.1	-16.0	-17.1	-16.2	-13.2	-14.1	-13.5
Profit after loan losses	-2.7	-4.1	-3.7	-4.9	-6.7	-4.7	-3.7	-5.5	-4.6	2.8	1.0	1.6
Tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.7	-0.2	-0.4
Profits after tax	-2.7	-4.1	-3.7	-4.9	-6.7	-4.7	-3.7	-5.5	-4.6	2.1	0.7	1.2
Core Tier 1 at start of year (in accordance with Basel II)	86	84	80	186	181	174	89	85	80	79	81	82
Core Tier 1 at end of year (in accordance with Basel II)	84	80	76	181	174	169	85	80	75	81	82	83
Risk-weighted assets at end of year (in accordance with Basel II)	502	501	503	1,488	1,495	1,519	616	619	627	482	484	490
Core Tier 1 ratio at end of year (in accordance with Basel II)	16.6%	15.9%	15.1%	12.1%	11.6%	11.1%	13.8%	12.9%	12.0%	16.8%	16.9%	16.9%
CET 1 ratio at end of year (in accordance with Basel III)	16.1%	15.4%	14.6%	11.0%	10.5%	10.0%	12.1%	11.2%	10.3%	15.9%	16.0%	16.0%
CET 1 assets on and off the balance sheet (according to Basel III)	3.3%	3.1%	3.0%	3.4%	3.3%	3.2%	3.1%	2.9%	2.7%	3.8%	3.8%	3.9%

Note. The starting values of the banks' capital and risk-weighted assets are based on the banks' reported positions in the first quarter of 2013.

Source: The Riksbank



## Glossary

**Basel II:** International regulatory framework for financial institutions that mainly regulates banks' capital adequacy, i.e. how much capital a bank must hold in relation to the risk it takes. The regulations also stipulate requirements concerning the banks' risk management and the disclosure of public information. Basel II was implemented in Sweden in 2007.

**Basel III:** International regulations for financial institutions that replace the Basel II regulations on the banks' capital adequacy. Compared to Basel II, Basel III entails increased capital requirements and regulations on capital buffers. Basel III also regulates the banks' liquidity management. The Basel III Accord will be progressively phased in by 2019.

**Capital adequacy regulations:** Regulations on the capital adequacy of banks. See Basel II and Basel III.

**Capital conservation buffer:** A requirement for a capital buffer consisting of Common Equity Tier 1. If the buffer is not complete, the bank must retain a portion of its profit to improve its capital ratio. The buffer requirement must be fully implemented by January 2019.

**Capital market:** Generic term for the stock market, credit market and derivatives market.

**CDS, Credit Default Swap:** A contract between agents on the credit market aimed at transferring the credit risk of an asset, such as a bond, from one agent to another. The buyer of a CDS contract buys credit protection from the seller of the CDS contract by paying a premium over the contract's duration or until a credit event occurs. If a credit event occurs, the buyer transfers the insured asset to the seller in exchange for the nominal value of the asset.

**CDS premium:** Annual cost in basis points for buying a CDS contract.

**Certificate:** A security for trading in the money market, issued for example by a bank or a company with the purpose of borrowing money. Maturity is a maximum of one year.

**CET 1, Common Equity Tier 1 Capital:** Stricter version of the core Tier 1 capital, in accordance with the Basel III Accord.

**Core Tier 1:** Tier 1 capital with deduction for capital contributions and reserves that might be included in the capital base as Tier 1 capital pursuant to Chapter 3, Article 4 of the Capital Adequacy and Large Exposures (Credit Institutions and Securities Companies) Act (2006:1371).

**Core Tier 1 capital ratio:** Core Tier 1 capital in relation to risk-weighted assets.

**Covered bond:** A bond whose holder has a special benefit right in the event of a bankruptcy. Covered bonds normally entail a lower credit risk than unsecured bonds, which means that the borrowing costs are lower.

**Credit gap:** The deviation from the trend in lending by monetary financial institutions to companies and households in relation to GDP.

**Credit risk:** The risk of a borrower failing to meet commitments.

**Credit terms:** The terms and conditions laid down in a loan agreement covering, for example, the interest rate and the repayment schedule. Credit terms can also include the maximum loan-to-value ratio allowed for a mortgage.

**CRR/CRDIV, Capital Requirements Regulation/Capital Requirements Directive IV:** Proposed EU regulation with directives that implement the Basel III Accord. The regulations include stipulations on the banks' capital adequacy, leverage and liquidity.

**Currency swap:** An agreement to buy or sell a currency at the daily rate and then sell or buy back the same currency on a later date at a pre-determined rate.

**Debt ratio:** Total household debt in relation to disposable income.

**Default rate:** The number of bankruptcies divided by the number of companies.

**Derivative instrument:** Financial instrument that entails agreements on commitments or rights at a given future point in time. The value of a derivative instrument is linked to an underlying asset. The most common derivative instruments are options, futures and swaps.

**Disposable income:** The total of a person's or a household's incomes less taxes and charges.

**EBA, European Banking Authority:** The European Banking Authority establishes joint regulatory and supervisory standards in the EU and conducts stress tests of European banks.

**EFSF, European Financial Stability Facility:** A temporary crisis management fund set up to safeguard financial stability in Europe by offering financial support to euro-area countries. To be replaced by the ESM in 2013.

**ESM, European Stability Mechanism:** A permanent international financial institution founded by the euro-area countries to safeguard stability in the euro area. The ESM will replace the earlier crisis management funds such as the EFSF.

**ESRB, European Systemic Risk Board:** The European Systemic Risk Board is responsible for the macroprudential supervision of the financial system within the EU.

**Gross margin on mortgage:** Difference between a credit institution's lending rate and the cost of borrowing for a mortgage in relation to the amount lent.

**Hybrid capital:** A cross between equity and debts. In the event of a bank becoming bankrupt, hybrid capital has higher priority than share capital, but lower priority than bonds. Hybrid capital is also known as Tier 1 capital supplements.

**Impaired loans:** Loans which will probably not be repaid in accordance with the terms of the loan contract. Impaired loans are listed on the balance sheet at their full amount, even if only parts of the loans are covered by collateral.

**Interbank market:** Financial market where banks trade interest and currencies with each other.

**Interbank rate:** The interest rate on unsecured loans that the banks offer other banks. Stibor (Stockholm Interbank Offered Rate) is usually used to measure the Swedish interbank rate. Stibor is used as a reference for rate setting or pricing of derivative contracts.

**Interest rate swap:** A bilateral agreement to exchange a specific interest rate in return for another interest rate for a predetermined period according to specific conditions.

**LCR, Liquidity Coverage Ratio:** Liquidity measurement defined by the Basel Committee that measures a bank's ability to deal with a stressed net outflow of liquidity for 30 days. In simple terms, an LCR of 100 per cent means that a bank's liquidity reserves are adequate to enable the bank to manage an unexpected liquidity outflow for 30 days.

**Leverage ratio (adjusted):** This measure specifies the banks' equity in relation to their total assets less reverse repos, derivatives and insurance assets.

**Liquidity:** Measure of the ability of a company or organisation to meet its payment obligations in the short term. Can also describe how quickly it is possible to convert an asset into money.

**Liquidity assistance:** Measures that a central bank may take to support the ability of one or more financial institutions to meet payment obligations in the short term with the purpose of avoiding a serious disruption in the financial system and strengthening confidence in the payment mechanism.

**Liquidity buffer:** Funds an institution holds to ensure its short-term debt-servicing ability.

**Liquidity risk:** The risk of not being able to meet payment commitments due to a lack of liquidity. Liquidity risk in a financial instrument means that an investment cannot be immediately liquidated at all or without falling sharply in value.

**Loan-to-value ratio:** A borrower's debt in relation to the market value of the collateral for the loan. For example, a household's loan-to-value ratio for its home corresponds to the household's debt collateralised by the home divided by the market value of the home.

**LTRO, Long-Term Refinancing Operation:** A refinancing programme in which the European Central Bank (ECB) lends capital at longer maturities to banks in the EU. Maturities are 3, 6, 12 and 36 months.

**Mortgaged assets:** Assets to which certain owners of receivables have priority if the borrower should be unable to repay the debt.

**Mortgage cap:** Finansinspektionen's general guideline for a maximum loan-to-value ratio of 85 per cent of a property's value. It only applies to new loans.

**Net commission income:** Income less cost of financial services sold (apart from interest), for example services related to payments, share trading, asset management and card operations.

**Net interest income:** Interest income from lending less interest expenditure for funding and deposits.

**NSFR, Net Stable Funding Ratio:** Liquidity measurement defined by the Basel Committee. The measurement puts a bank's stable funding in relation to its illiquid assets in a stress scenario that covers a period of one year.

**Provisions:** Provisions for probable loan losses.

**Recoveries:** Previous quarters' realised loan losses that are reversed.

**Repo:** A financial instrument resembling a short-term loan. The participant receiving the money (the seller) transfers the security to the purchaser. At the same time, the seller undertakes to repurchase the security from the purchaser, at a predetermined date, for a slightly larger sum of money. The difference between the sale and the repurchase sums is equivalent to the interest rate on a loan.

**Reversals:** Previous quarters' provisions for probable loan losses that are reversed.

**Risk premium:** The additional return an investor requires as compensation for an additional risk.

**Risk weight:** In simplified terms, to calculate a bank's risk-weighted assets, the amount lent is multiplied by a risk weight. The risk weights are determined on the basis of how likely it is that the borrower will be unable to fulfil its loan commitment and thus varies from borrower to borrower – a high risk weight implies a greater risk than a low risk weight.

**Risk-weighted assets:** Assets recorded in the balance sheet and off-balance sheet commitments valued by credit, market and operational risk in accordance with the capital adequacy regulations (see Basel II and Basel III).

**Senior bonds:** Unsecured bonds whose holder does not have a special benefit right in the event of a bankruptcy. The holder has higher priority than investors in subordinated bonds.

**Stibor:** See Interbank rate.

**Subordinated bonds:** Unsecured bonds whose holder does not have a special benefit right in the event of a bankruptcy. The holder has lower priority than investors in senior bonds.

**Tier 1 capital:** Equity less proposed dividends, deferred tax assets and intangible assets such as goodwill. Certain types of subordinated debt, so-called Tier 1 capital supplements or hybrid capital, are also allowed to be included in Tier 1 capital.

**Unsecured bonds:** A bond whose holder does not have a special benefit right in the event of a bankruptcy. Unsecured bonds normally entail a higher credit risk than covered bonds, which means that the termination costs are higher.



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