



# Financial Stability Report 2009:2



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## ■ Foreword

The Riksbank has the Riksdag's mandate to promote safe and efficient payments. This entails safeguarding the stability of the financial system, which is also a prerequisite for an effective monetary policy.

An ongoing analysis of stability provides possibilities for the early detection of changes and vulnerabilities that together can lead to a serious crisis. A thorough analysis also facilitates the management of a crisis if one were to occur. The Financial Stability Report, which is published twice a year, presents the Riksbank's overall assessment of risks and threats to the financial system and an evaluation of the capacity for coping with them. The work on the analysis of stability is accordingly an instrument that is directly connected with the Riksbank's function of promoting safe and efficient payments.

By making the analysis available to financial market participants and other interested parties we can share our viewpoints and contribute to the debate on this subject.

The Executive Board of the Riksbank discussed this Report at its meetings on 4 and 19 November. The Report uses data available as at 19 November.

Stockholm, November 2009

*Stefan Ingves*

GOVERNOR OF SVERIGES RIKSBANK

## The Riksbank and financial stability

**T**he Riksbank has the Riksdag's mandate to "promote safe and efficient payments". Payments are material to every economic activity and a central feature of the financial system. The government therefore has a particular interest in overseeing the functioning of payment systems. A serious crisis in the financial system is liable to entail extensive economic and social costs.

**The commercial banks are responsible for the central components of payment systems.** At the same time, banking has a number of special characteristics. Liquidity risk is a natural part of banks' activities since they normally obtain short-term funding and provide long-term loans. Moreover, the similarity of the operations in different banks entails a risk of problems elsewhere hitting many banks simultaneously.

**In Sweden the four major banks (Handelsbanken, Nordea, SEB and Swedbank) have a dominant position, with a combined market share of around 75 per cent.** Besides the banks, the financial system comprises other institutions, market places and the financial infrastructure for registering and settling transactions. The infrastructure also includes the public framework, that is, rules and legislation.

**Stability is founded on confidence in the financial system.** The occurrence of a problem in one institution may suffice to generate apprehensions that spread to similar operations elsewhere. A loss of confidence can make it difficult for the banks to undertake their operations, in which case the system will be in danger. The basic requirements for confidence are sound institutions and efficient markets.

**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 analysis focuses on the systemically important institutions: the four major banks. The Financial Stability Report, published twice a year, presents the Riksbank's view of the risks and the banks' capacity to cope with any shocks. Knowledge is also disseminated in other ways: by arranging dialogues with market participants, publishing speeches and participating in the public debate. Moreover, the Riksbank is in a position to influence the framing of laws and rules that pertain to supervision and crisis management, for instance by submitting opinions and by participating in international organisations.

**The Riksbank is the authority that has the possibility to provide emergency liquidity assistance if problems arose of such a serious nature as to threaten the entire system.** To be able to use this possibility in a good way requires adequate crisis preparedness. This in turn requires an appropriate crisis organisation with good information channels and analysis tools and well-developed forms of cooperation with other authorities.

**The Riksbank cooperates closely with Finansinspektionen and the Ministry of Finance.** The Ministry of Finance is responsible for the regulation of financial enterprises and Finansinspektionen (the Swedish Financial Supervisory Authority) is responsible for supervision. The authorities' interaction 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.

## ■ Summary of the stability assessment

### In brief

Since the previous Financial Stability Report was published in June, the functioning of the financial markets has improved both in Sweden and abroad. At the same time, the recovery of the world economy has begun and it appears that GDP growth will be somewhat stronger than many observers expected only a few months ago.<sup>1</sup> However, the basis for the recovery is fragile and future developments are still uncertain. Sweden has been hit hard by the deep recession abroad and the recovery will take time.

In addition, uncertainty remains over the size of future loan losses and confidence between financial market participants has not been entirely restored. Although the demand for some support measures has declined internationally, the Riksbank's assessment is that the measures are still of significance to ensure the financial markets can function. It is therefore important to carefully consider how and when various support measures should be phased out.

As the conditions in the financial markets have improved and the recession appears to have bottomed out, it has become easier for the banks to fund themselves. At the same time, the risk of future loan losses has declined, although it is still the most prominent risk.

In the Riksbank's main scenario the Swedish banks' loan losses are expected to be lower than was assumed in the previous Financial Stability Report, despite the forecast period having been extended by one year. Loan losses are expected to amount to SEK 155 billion during the period 2009-2011, which can be compared with forecast of SEK 170 billion for the period 2009-2010 in the previous report. The downward revision is mainly due to the improvement in the economic outlook. At the same time, the banks' loan losses so far this year have been lower than expected. The largest losses are still expected to come from the banks' activities in the Baltic countries. The banks have sufficient capital to meet losses of this magnitude, and are still well-capitalised in an international comparison. Since the previous Financial Stability Report the banks have actively increased their capital and reduced their risk-weighted assets. The banks' resilience has thus improved.

However, a setback in economic activity could lead to the situation for the banks becoming worse than in the main scenario. The Riksbank has therefore examined the banks' resilience towards a much worse, but less likely, scenario in a stress test. All of the major Swedish banks perform better in this stress test than in the test that was conducted in June. This is largely due to the improvement in the banks' capital situation. At the same time, the current stress test is based on a brighter main scenario than the test in the previous report.

<sup>1</sup> See Sveriges Riksbank (2009), Monetary Policy Report, October.

## The Riksbank's assessment of financial stability

### THE PREVAILING SITUATION FOR THE BANKS HAS IMPROVED

Since the previous Financial Stability Report was published in June, the functioning of the financial markets has improved both in Sweden and abroad. This is reflected, for example, by the fact that financial institutions can now fund their operations on the financial markets to a greater extent and at a lower cost than during the most acute phase of the crisis. This applies to the interbank market, for instance, where the interest rate differential towards the expected policy rate is back at the levels prevailing prior to the Lehman Brothers collapse. At the same time issue volumes of bonds with both good and not so good credit ratings have risen, above all in Europe and the United States. Volumes have risen in Sweden too, but activity is still low. As far as Sweden is concerned, the responses to the Riksbank's company survey and risk survey also indicate that access to funding without government subsidies has increased.

Another factor indicating that financial markets have improved is that demand for central bank measures has declined.

At the same time, the recovery of the world economy has begun and it appears that GDP growth will be somewhat stronger than many observers expected only a few months ago.<sup>2</sup> Several real economic indicators, both in Sweden and globally, have turned upwards. World trade is rising once again compared with the spring. Unemployment, however, is trailing behind, particularly in the United States, and remains at high levels. Developments in Sweden generally are following the rest of the world. However, the basis for the recovery is fragile and future developments are still uncertain. Sweden has been hit hard by the deep recession abroad and the recovery will take time.

All in all, the financial and real economic developments in Sweden and abroad mean that the conditions for Swedish banks and their borrowers have improved since the last Financial Stability Report was published.

Despite recent indications of improvement, however, the situation is still strained on the international and Swedish financial markets. There are still parts of the financial markets that are not functioning as well as before the crisis. For example, activity in the repo market is still low and the market for short-term borrowing through commercial paper is still not completely restored. At the same time, the improvement in the markets for securitised assets has largely been due to targeted support from central banks.

Moreover, there is still uncertainty over the size of future loan losses, there are probably still large losses remaining to be reported. Globally financial institutions have made losses of around USD 1,700

<sup>2</sup> See Sveriges Riksbank (2009), Monetary Policy Report, October.



billion since the start of the crisis. To cover these, institutions have injected new capital corresponding to USD 1,500 billion losses.<sup>3</sup> According to the International Monetary Fund, IMF, the total losses are expected to amount to around USD 3,400 billion.<sup>4</sup>

At the same time both financial and real developments are largely due to central banks' severe interest rate cuts as well as the other measures taken by central banks and public authorities. These measures are still considered to be of significance for the functioning of the financial markets.

#### DEVELOPMENTS HAVE LED TO REDUCED INTEREST IN PARTICIPATION IN CENTRAL BANK MEASURES

If the positive development in the financial markets continues, central banks and other authorities around the world will gradually need to phase out their support measures. This is moreover a natural consequence of the demand for the various support measures abating. Some financial institutions have already begun paying back their loans and the use of several of the support measures is declining. This applies in particular in the United States, where demand for several of the Federal Reserve's lending facilities has declined substantially since last spring. In addition, demand for central banks' dollar lending facilities has also decreased since it has become relatively expensive to borrow within these measures programmes compared with borrowing directly in the market.

As a consequence of the decline in demand, several central banks have announced that they are starting to phase out some measures, for example, parts of their dollar lending facilities. The Federal Reserve has changed the terms for several of its facilities, and reduced the scope of some of them. In September, the Riksbank phased out its measures programme for the commercial paper market. Demand for the Riksbank's variable rate loans in Swedish kronor has also been low since the summer. In November the interest supplement for this facility was raised to increase the incentive for a natural phase-out. However, the facility still remains in place as a safety-net. The Riksbank's dollar lending facility was phased out in November as a result of demand ceasing and all of the loans matured at the beginning of the month.

The market's reaction to the notified phase-outs so far does not indicate any negative consequences.

However, there is still considerable uncertainty over the strength of the recovery. Similarly, there is still uncertainty as to the size of future counterparty loan losses, and hence the lack of confidence between financial market participants remains to some extent. Consequently, there is reason to carefully consider how and when

3 See Bloomberg on 18 November 2009.

4 See the IMF, Global Financial Stability Report, October 2009.

various support measures should be phased out. A facility that is not utilised may nevertheless fulfil a purpose through its existence as part of a safety net, thereby strengthening confidence.

#### THE SWEDISH BANKS ARE STILL FACING LARGE LOAN LOSSES

The Swedish banks are still financially strong and their results before loan losses are still at high levels. However, the large decline in GDP growth in Sweden and abroad has entailed large loan losses although smaller than expected in the previous Financial Stability Report. The large losses are primarily explained by the provisions for probable loan losses having increased, and stem largely from the banks' activities in the Baltic countries.

As the conditions in the financial markets have eased and the recession appears to have bottomed out, it has become easier for the banks to fund themselves. At the same time, the risk of future loan losses has declined, although it is still the most prominent risk.

However, the Riksbank's assessment is that the major Swedish banks are still facing substantial loan losses. The largest losses, in relation to lending, are still assumed to come from the banks' exposures in the Baltic countries. This is mainly due to the very weak macroeconomic developments expected in these countries. The percentage of households and companies defaulting on payments is increasing at a rapid rate. However, developments in the individual Baltic countries differ. Estonia has greater capacity to manage its problems than Latvia and Lithuania, partly because Estonia has saved earlier budget surpluses in funds that can be used to cover budget deficits.

Moreover, the number of defaults is expected to continue increasing somewhat among companies in Sweden and other countries where Swedish banks have activities. Cyclically-sensitive sectors such as transport and construction are expected to be particularly vulnerable. This applies in particular to the shipping sector, where major loan losses may arise as a result of the dramatic decline in world trade during the crisis. The losses relating to commercial properties in Sweden are expected to be lower than during the crisis of the 1990s. This is mainly because interest rates are much lower now. However, the deep recession is nevertheless expected to lead to loan losses from commercial property companies increasing, in line with loan losses in the corporate sector as a whole.

The loans losses are expected to be lowest among Nordic households with housing as collateral. This is partly because the social safety nets are relatively well-developed in the Nordic region, and a Nordic household will incur long-lasting judicial consequences if it defaults on its mortgage payments. Stress tests regarding Swedish households' debt-servicing ability show that households in general have the scope to manage an increase in unemployment and rising interest rates.

In the Riksbank's main scenario the loan losses of the four major banks are expected to total SEK 155 billion during the period 2009-2011. The loan losses are calculated at SEK 60 billion in 2009, SEK 65 billion in 2010 and SEK 30 billion in 2011. For 2009 and 2010, this entails a downward adjustment of SEK 45 billion compared to the main scenario in the previous Financial Stability Report. This is mainly because the recovery in the real economy is now expected to be stronger. In addition, the outcome for the banks' loan losses in the first three quarters of this year was better than expected. Almost 50 per cent of the loan losses are assessed as stemming from the banks' operations in the Baltic countries, and around one third from operations in Sweden and the other Nordic countries.

All of the major Swedish banks have sufficient capital to meet the losses that are assumed in the Riksbank's main scenario and they still appear well-capitalised in an international perspective. Since the previous Financial Stability Report was published the banks have actively increased their capital and reduced their risk-weighted assets. During the autumn of 2009, the Riksbank and Finansinspektionen (the Swedish FSA) have investigated how the Swedish banks in the Baltic countries are handling the rapidly-increasing stock of problem loans and the collateral associated with them. The banks' management follows good international practice and the banks have a realistic perception of the size of their problem loans (see the box How the banks have handled problem loans in the Baltic countries).

In the wake of the financial crisis there is now an international discussion on new regulation and supervision of financial institutions. A reinforcement of the regulations is a necessary condition for a stable global system (see box The international regulation agenda, and the article Reducing the risk of future crises – a stronger macroprudential framework). Part of the discussion concerns changing and supplementing the regulations regarding the banks' capital adequacy requirements. The fact that the Swedish banks have recently increased their capital may to some extent be an adjustment to future rules. In addition, new liquidity regulations will probably be introduced, which is desirable as it may contribute to reducing the liquidity risk and increasing transparency. In this context it is positive that the banks are continuing to increase the maturities for their borrowing.

#### MAJOR RISKS REMAIN

However, there are substantial risks that the situation for the major Swedish banks may deteriorate more than in the main scenario. Below follows an outline of the most significant risks for the banks in the present situation. The arrows show the direction in which the respective risk has changed since the previous Financial Stability Report was published in June. All in all, the risks are considered to have declined slightly compared with the previous Report. This change can be explained by an improvement in the financial markets and in the economic prospects as a whole.

↑	Increased risks
↗	Slight increase in risks
→	Unchanged risks
↘	Slight decrease in risks
↓	Decreased risks

### → Developments in the Baltic countries

There is a risk that the economic recession in the Baltic countries will remain deep for a longer time to come. Moreover, it is difficult to assess with any certainty how much the recession in the Baltic countries will affect the Swedish banks' loan losses. At the same time, the need for external funding is very large, particularly in Latvia, which is almost entirely dependent on the international support package. However, there is a risk that Latvia will not live up to its commitments within the framework of the support programme and that it will therefore not receive the external funding. In such a situation, it is possible that the country will suffer a political and economic crisis, which could increase insecurity in the entire region. However, this contagion risk has declined compared with the most acute financial crisis a year ago. If developments in the Baltic countries deteriorate significantly, confidence in parts of the Swedish financial system may be damaged. The risk of a poorer development in the Baltic countries is assessed to be as high as in June.

### ↘ Real economic developments

Several factors indicate that economic activity has now taken an upturn in Sweden, as well as abroad. However, there is still considerable uncertainty whether this is the beginning of a sustainable recovery in the economy. For example, the financial system is still sensitive to individual shocks and a negative event could trigger new problems in the financial markets, which in turn could lead to the real economy taking a downward turn again and thus delaying the recovery. Such a scenario thus reflects an economic recession with two troughs, a so-called double-dip recession. In addition to the uncertainty in the assessment of future economic developments, it is also difficult to determine the extent of the effects of the recession on the Swedish banks' loan losses. The real economic risk is assessed to have decreased slightly compared with the previous assessment.

### ↘ Developments in the financial markets

Since June, the financial markets have begun to function better, which is one reason why this risk is assessed to have decreased slightly compared with the previous Report. However, there are still some sub-markets that are not fully functional. Moreover, the functioning of the financial markets is still dependent on the measures taken by the authorities and market participants still lack confidence in one another. This means that there is uncertainty over how well the financial markets are actually functioning. It also means that the financial system is sensitive to individual shocks that could lead to the willingness to take risk declining once again and to prices of financial assets falling. As far as Sweden is concerned, one such shock could be a deterioration in the Baltic countries.

## Stress tests show that the banks can manage much larger losses than in the main scenario

The Riksbank regularly carries out stress tests to assess how less probable, but possible, negative events could affect the banks' resilience. A decisive factor for the resilience of the banks is to what extent they have sufficient capital to deal with coming losses.

Although there are currently signs that the economy is beginning to recover, there is still considerable uncertainty as to whether this is the beginning of a sustainable recovery. One therefore cannot rule out the possibility that the situation for the banks might prove worse than in the Riksbank's main scenario. Given this, the Riksbank also describes in this Report the results of a stress test where the world economy shows a much poorer development than in the main scenario. The stress test scenario reflects a recession with two troughs, a so-called double-dip recession. See Chapter 3 for more detailed information on the assumptions in the stress test.

The stress test scenario takes place over a period of just over two years, from the beginning of the fourth quarter 2009 to the end of 2011. Under the difficult conditions assumed in the stress test, the loan losses for the four major banks total a good SEK 271 billion during the period. Almost 40 per cent of these loan losses stems from the banks' operations in the Baltic countries.

As a result of the loan losses, the banks' Tier 1 capital ratio falls to a low point of between 8.1 and 12.8 per cent in the scenario. This means that all of the banks would also manage to meet the statutory capital adequacy requirement during the entire period, not only in the main scenario, but also under more stressful conditions.

The stress test shows that all of the major Swedish banks perform better in this stress scenario than in the test described in the June Financial Stability Report. This is largely due to the improvement in the banks' capital situation. At the same time, the stress test is based on a main scenario which is brighter in this Report than in the previous one, which means that the banks' loan losses are lower.

However, it is still the case that if the stress scenario became a reality, the banks could suffer increased funding difficulties, their credit ratings could come under pressure and a crisis of confidence could arise. However, the Riksbank and other authorities are prepared to manage the problems that could arise from such a sequence of events.

## There is risk that imbalances are being built up which will affect the banks

In addition to the more immediate risks described in this Report, there is also reason to highlight some risk factors in a slightly longer perspective than in the main scenario.

In Sweden, household indebtedness continues to increase and house prices have begun to rise again despite the recession. However, an overall assessment points to house price movements in Sweden being largely justified and to house prices probably continuing to rise further over the coming period (see box Developments in house prices and mortgage markets in Sweden and abroad). But the increase in house prices ought to be moderate, as unemployment continues to rise and interest rates gradually begin to be raised. However, this does not rule out the possibility of developments becoming unsustainable in the longer run.

As the economy is in a situation which will require a low interest rate for some time to come, there is a risk that households may build up unreasonable expectations regarding interest rates. A high level of indebtedness for households may be difficult to sustain when interest rates return to more normal levels. This applies in particular if the uncertainty in the labour market persists. Moreover, most of households' new loans are taken at a variable interest rate, and there is uncertainty over how far households are taking into account the future interest rate increases. There is thus a risk that households will take on too much debt and that house prices may fall in the long run.

However, this development would not entail any direct threat to financial stability. The Riksbank's stress tests show that households in general can still pay their loans, even if interest rates become much higher than they are now. However, higher interest rates would reduce households' scope for consumption, which would ultimately also affect other sectors of the economy and finally the banks.

As buying and financing housing entail long-term commitment, there is reason for borrowers to base their assessments on the interest rates that are expected to prevail in a couple of years' time and which are expected to be much higher than the current low level. Moreover, it is important that the banks ensure that their lending is sustainable in the long term by having sufficient margins in their credit calculations. In this context there may be good reason to review the loan-to-value ratios and amortisation rates. Finansinspektionen (the Swedish financial supervisory authority) has begun a review to check that the banks are taking into account both future interest rates and the risk of unemployment when granting credit. If this is not sufficient to prevent a development that may be unsustainable in the long term, Finansinspektionen can take measures.

### Financial markets – in brief

Since the previous Financial Stability Report was published in June, the functioning of the financial markets has improved both in Sweden and abroad. Financial institutions can now to an increasing extent fund their operations in the financial markets at a lower cost than during the most acute crisis. This is true of the interbank markets, for example, where the cost of funding has fallen sharply since last spring. At the same time issuance volumes of investment grade corporate bonds has risen, especially in Europe and the United States. Volumes have risen in Sweden too, but activity is still low.

Another factor indicating that financial markets have improved is that the demand for central bank measures has decreased. As a consequence, several central banks have announced that they are starting to phase out some measures. The Riksbank has, for instance, raised the interest supplement on its variable interest rate loans in Swedish kronor in order to increase the incentive for a natural exit.

At the same time, the recovery of the world economy has begun and it appears that GDP growth will be somewhat stronger than many observers expected only a few months ago.<sup>5</sup> Developments in Sweden generally follow the rest of the world. However, the basis of the recovery is fragile and future developments are still uncertain. Sweden has been hit hard by the global deep recession and the recovery will take time.

All in all, the financial and the real economic developments in Sweden and abroad mean that the associated conditions for Swedish banks and their borrowers have improved since the last Financial Stability Report was published.

Despite recent indications of improvement, however, the situation is still strained on the global and the Swedish financial markets. There are still sub-markets that have not yet recovered. In addition, uncertainty remains as to the size of as yet unrealised loan losses for counterparties, and hence to some extent a lack of confidence between financial market participants.

At the same time both financial and real developments are due to central banks' severe interest rate cuts as well as the other measures taken by central banks and government authorities. These measures are still considered to be of significance to the functioning of the financial markets. Consequently, there is reason to carefully consider how and when various support measures should be phased out. A facility that is not utilised may nevertheless fulfil its purpose through its existence as part of a safety net, thereby inspiring confidence.

5 See Sveriges riksbank (2009), "Monetary Policy Report", October.

Efficient financial markets play an important role in banks' access to funding. About half of Swedish banks' borrowing consists of market funding, of which about two thirds is in foreign currency. Long-term market funding is through bonds, a large proportion of which are covered bonds. Short-term market borrowing mainly consists of certificates and loans through the interbank market. Another important sub-market is the repo market, in which the banks are active through securities repo transactions. Developments on both the stock market and the fixed income market are of significance for the banks' earnings. Markets in which Swedish banks have no direct exposure can also have an indirect impact. One example is the securitisation market, which has played a decisive role for the extent of the financial crisis.

This chapter aims to give a progress report and analysis of the financial markets of significance to Swedish banks and companies. The chapter starts by describing general developments since the last Financial Stability Report. A description is then given of developments in some sub-markets, on the basis of both a global and a national perspective.

## The development of the financial crisis

**Since the previous Financial Stability Report was published, the functioning of the financial markets has improved, both in Sweden and abroad.** This means improved ability for banks, companies and other institutions to fund themselves on the market and at a lower cost than during the most acute crisis. The recovery can be seen in markets for both long-term and short-term funding. In the money market the improvement can be seen in the interbank market, where banks borrow from each other. Confidence between banks has improved, which has led to falling risk premiums and lower interbank rates. The interest rate differential relative to the expected policy rate is now back at the levels that prevailed both in the USA and Europe before the collapse of the US investment bank Lehman Brothers. In other parts of the money market volumes of outstanding securities have increased somewhat, but they are still low. For example, the repo market and commercial paper market are still not completely restored. On the securitisation market activity is also subdued compared to before the crisis. The Riksbank's analysis shows that the risk premium in the Swedish money market is now almost exclusively related to credit risk, unlike at the start of the crisis when liquidity risk was predominant. However, it is not clear how much the support measures contribute to reducing liquidity risk, and how this will be affected when the measures are withdrawn.

**The credit market has benefited from the fact that the real economy has improved more than expected in some respects.** The recovery of the world economy has begun and it appears that GDP growth will be somewhat stronger than many observers expected only a few months ago. Developments in Sweden generally follow the rest of the world. However, the basis of the recovery is fragile and future developments



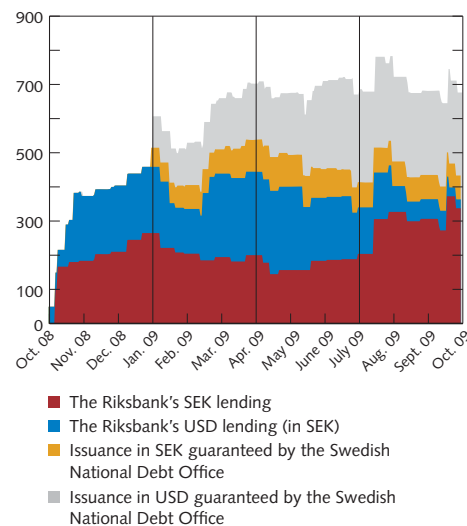
are still uncertain. Sweden has been severely affected by the deep global recession and the recovery will take time. The brighter economic situation has contributed to generally lower credit risk, both in Sweden and internationally. This has caused lower interest rates in the credit market, increased possibilities to issue securities with longer maturities and better access to the markets even for high yield corporates. Issuance in the bond markets have increased during the year. At the beginning of the year issuance volumes were particularly high due to a pent-up borrowing requirement. The increase in volumes is probably also an effect of market funding being used more when bank lending was constrained. But there is still a great difference between the abilities of different companies to gain access to funding with longer maturities.

### Despite improved market conditions, the financial sector is still dependent on the support of central banks and government authorities.

The Federal Reserve has not announced any new facilities since the spring, but on the other hand has retained and even prolonged several of its ongoing measures. Examples of prolonged programmes are measures for the markets for commercial paper, asset backed securities (ABS) and commercial mortgage backed securities (CMBS). Since the spring the European Central Bank (ECB) has initiated a market-specific purchase programme for covered bonds and also introduced a new lending facility with a 12-month maturity at a fixed interest rate for monetary policy purposes. Also the British central bank, the Bank of England, extended its purchase programme for government bonds most recently in November to further strengthen its expansive monetary policy.

**In the Swedish market there is still extensive government support** (see Chart 1:1). The Riksbank's total lending has remained at a high level since the spring, with the difference that the dollar lending has decreased and in November all loans denominated in US dollars had matured.<sup>6</sup> At the same time borrowing in Swedish kronor has increased, which is due to a high degree of participation in the Riksbank's 12-month fixed interest rate loans.<sup>7</sup> Dependence on government guarantees from the National Debt Office is still high and the government is guaranteeing over SEK 300 billion of the banks' issuance of securities. However, this represents a decrease of SEK 45 billion since June. To provide further support to the borrowing ability of banks and mortgage institutions the Swedish government guarantee programme has been prolonged up to and including April 2010. Besides these measures central banks around the world have continued to pursue an aggressively expansive monetary policy since the spring. In Sweden the policy rate has been cut on one occasion since the last Financial Stability Report and is now 0.25 per cent.

**Chart 1:1. Government support from the Riksbank and Swedish National Debt Office to financial institutions on the Swedish market**  
SEK billion

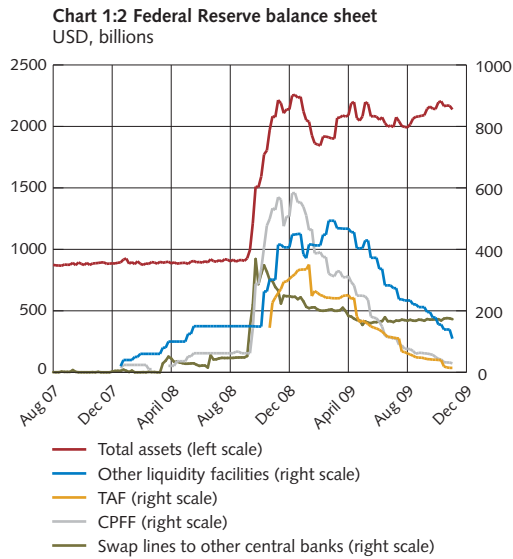


Note. The chart only includes government guaranteed issuances as of January 2009.

Sources: The Riksbank and Swedish National Debt Office

<sup>6</sup> The Riksbank's dollar lending facility was discontinued in November. See the Riksbank's website, [www.riksbank.se](http://www.riksbank.se).

<sup>7</sup> Unlike the variable interest rate lending facility at three, six and twelve month maturities, which promotes financial stability, the three twelve month fixed interest rate loans have a monetary policy purpose and are a complement to adjustments of the policy rate.



Note. Other liquidity facilities include Primary Dealer Credit Facility (PDCF), Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF), Term Asset-Backed Securities Loan Facility (TALF), primary and secondary credit, seasonal credit and outstanding principal amount of loans to American International Group and Maiden Lane (I, II and III) LLC.

Source: Federal Reserve

**Some of the central banks' support measures are no longer used to the same extent.** This applies mainly to the US, which is probably because the country was first to be affected by the crisis and should therefore be the first to emerge from the crisis. Demand for several of the Federal Reserve's lending facilities has fallen sharply since the spring (see Chart 1:2).<sup>8</sup> In June the Federal Reserve therefore decided to change the terms and conditions of several of its facilities. Some support programmes, such as the Term Auction Facility (TAF) and Term Securities Lending Facility (TSLF), were reduced in scope since conditions in the US money market improved.<sup>9</sup> In October the US government also announced plans to reduce the scope of its Troubled Asset Relief Program (TARP)<sup>10</sup> and instead focus on programmes for specific markets where access to credit is still limited, such as the mortgage market. Demand for central banks' dollar lending facilities, through swap arrangements with the Federal Reserve, has also decreased since it has become relatively expensive to borrow within these programmes compared with borrowing in the market. Several central banks have already phased out parts of their dollar lending facilities.<sup>11</sup>

**Demand for several measures has also fallen in Sweden.** There has been no demand for the Riksbank's dollar lending facility since August and at the beginning of November all of these outstanding loans had matured. In September the Riksbank discontinued its programme for lending against collateral in commercial paper, since there were no longer any participants in the programme. Demand for the Riksbank's variable interest rate loans in Swedish kronor has also been low since the summer. In November the Riksbank increased incentives for a natural phase-out of this facility by increasing the cost of credit. The facility still remains in place, however, as a safety net and it will be phased out as the situation in the financial markets improves. The Riksbank's dollar lending facility was also discontinued in November due to low demand.

<sup>8</sup> See the Financial Stability Report 2009:1 for an outline of the Federal Reserve's non-conventional measures up to and including spring 2009.

<sup>9</sup> Both TAF and TSLF are aimed at promoting liquidity in the money market by offering credits at longer maturities (one to three months) to the Federal Reserve's counterparties.

<sup>10</sup> TARP is a series of measures programmes aimed at strengthening stability in the financial markets, facilitating the conditions for financial institutions and improving market liquidity.

<sup>11</sup> The ECB, the Bank of England and the Swiss National Bank have discontinued their dollar auctions with maturities of 28 days and three months, but have retained their weekly dollar auctions.

## The development of the money market

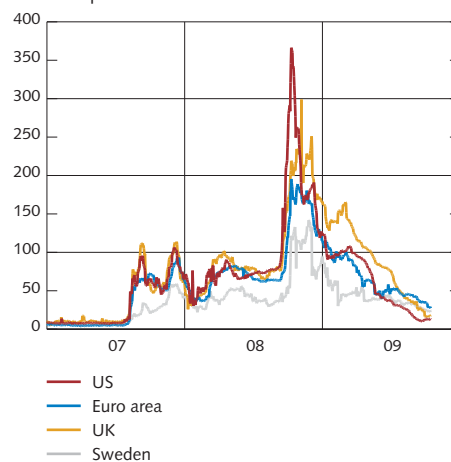
### Conditions in the interbank market have improved since the spring.

This is reflected in the fact that the banks are lending to each other again to a greater extent. The cost of interbank lending has also continued to fall during the past six months. This has meant that the risk premium, measured as the difference between the three-month interbank rate and the expected policy rate (the basis spread) has fallen by about 20 basis points since the last Financial Stability Report. The basis spread is a common measure of stress in the money market and current levels are lower than those before the most acute liquidity crisis in September 2008 (see Chart 1:3). On the other hand the risk premium is still higher than the remarkably low levels seen for a period up to 2007 (see Box Financial stress index). It is, however, uncertain whether risk premiums will return to those low levels. The interest rate differential has also fallen for other maturities. In Sweden, for example, the twelve-month basis spread has fallen sharply since the spring. The rate differential on a six-month maturity has also decreased, though to a smaller extent, indicating that this particular segment has not yet recovered to the same degree.

**One contributing factor to the improved conditions is the central banks' extensive liquidity support measures.** As things stand at the moment it is difficult to evaluate how the market would function without these measures. Similarly, there is still uncertainty as to the size of losses for counterparties, and hence to some extent a lack of confidence between financial market participants. Globally, financial institutions have made losses of about USD 1,700 billion since the start of the crisis. To cover these losses financial institutions have injected new capital equivalent to USD 1,500 billion.<sup>12</sup> According to the IMF, total losses are expected to be about USD 3,400 billion (of which USD 2,800 billion for the banks).<sup>13</sup> Thus, according to these calculations major losses still remain to be accounted for.

**The risk premium in the Swedish interbank market is almost exclusively made up of the credit risk premium.** This is shown if the Swedish basis spread is divided into two factors, related to credit risk and liquidity risk.<sup>14</sup> The division makes it possible to see how the relation between these two risk premiums has varied since the autumn 2007 (see Chart 1:4). At the start of the financial crisis the risk premium was mainly liquidity related, which is in line with the constrained liquidity situation that arose in the beginning of the crisis and derived

Chart 1:3. Three-month interbank rate minus expected policy rate  
Basis points



Note. In Sweden, the differential between three-month interbank rates and expected repo rates refers to the difference between the three-month Stibor and the overnight index swap rates (STINA).

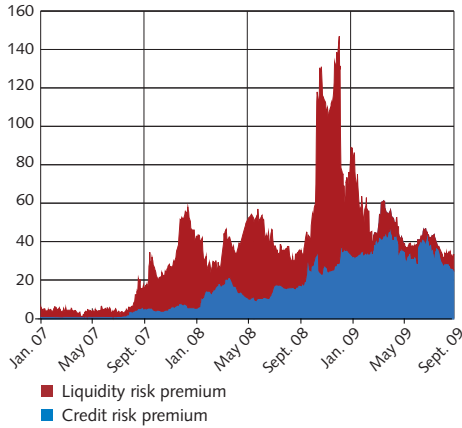
Source: Reuters EcoWin

<sup>12</sup> See Bloomberg on 18 November 2009.

<sup>13</sup> See IMF (2009), "Global Financial Stability Report", October.

<sup>14</sup> See the article "The Risk Premium on the Swedish Money Market – Experiences from the Crisis", Economic Review, 2009 no 3, Sveriges Riksbank. The method builds on a model developed by the Bank of England, see Bank of England (2007), "An indicative decomposition of Libor Spreads", Quarterly Bulletin, Q4.

**Chart 1:4. Indicative breakdown of Swedish three-month basis spread**  
Basis points



Note. Credit risk refers to the risk of a counterparty not being able to fulfill their obligations. Liquidity risk is the risk of not being able to turn an asset into cash.

Source: The Riksbank

from the fact that confidence between market participants disappeared. As liquidity support measures from the central bank and government authorities had an effect on the financial markets the liquidity related share decreased. At the same time the credit risk related share increased as the crisis spread to the real sector and the corporate earnings outlook deteriorated.

**Activity on the repo market is still lower than before the crisis, both internationally and in Sweden** (see box Developments on the repo market). Nevertheless, a large percentage of market participants state in the Riksbank's risk survey that the repo market is functioning adequately. There are several factors behind the low activity. For example, the banks do not want to increase their loan-to-value ratios or the size of their balance sheets, since they then risk being perceived as too risky.<sup>15</sup> One way of avoiding this problem is to use a central counterparty (CCP). A CCP allows reverse repos with several different counterparties to be netted, which means far less of an increase in the size of the balance sheets (see box Central counterparty clearing). Currently most of the CCPs are in different repo markets and Nasdaq OMX is planning to launch a central counterparty for the repo market in Sweden shortly.

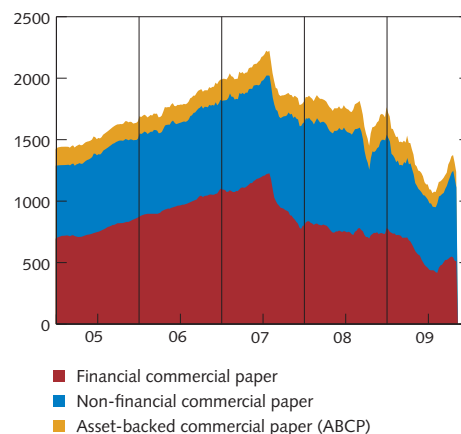
**Large amounts of excess liquidity as well as low and stable interest rates also contribute to the low activity.** At the same time this has led to unusual interest rate movements in several repo markets. The large supply of government securities in many countries has meant that interest on short repos has been higher than interest on unsecured interbank loans. In the US the Federal Reserve's purchase of securities issued by Fannie Mae and Freddie Mac created a shortage of those securities, which led to the repo rate for such securities being at almost the same levels as the repo rates for government securities. Recently there have been some signs, both in the USA and Europe, of a slight increase in the demand for repos of securities with a lower credit-quality as collateral, but this still refers to very small volumes. On the triparty repo market, where a clearing organisation acts as intermediary, the problem remains of large concentration risks that can threaten financial stability.<sup>16</sup> However, extensive work is in progress to change this market to reduce the risks.

<sup>15</sup> International Financial Reporting Standards, IFRS, are applied in Sweden and Europe, which means that the size of the balance sheet of those lending a security under a repo increases by the full value of the repo. Since the actors risk being perceived as higher risk the greater their balance sheet is in relation to their capital there is an unwillingness to enter into repos. In the USA another accounting standard is applied (US GAAP), under which repos do not appreciably increase the balance sheet.

<sup>16</sup> The triparty repo market is dominated by two large actors; the Bank of New York and J.P. Morgan.

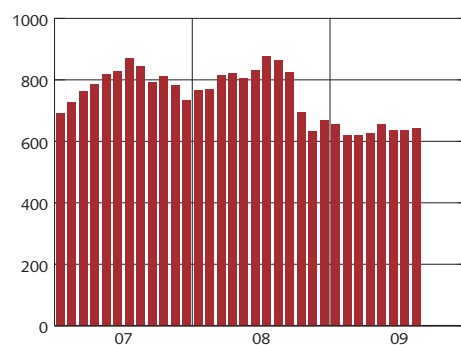
**Issuance on the commercial paper market is still low both in the US and Europe.**<sup>17</sup> To some extent the low issuance volumes are a consequence of the decrease in corporate borrowing requirements due to the recession, both internationally and in Sweden. At the same time it can be a sign that access to long-term funding has increased and that companies to a lesser degree are demanding short-term funding (see the section on the Development of the Bond Market). Since August issuance in the US market has, however, increased somewhat after record lows in July (see Chart 1:5). At the same time demand for the Federal Reserve's measure programmes directed at the commercial paper market has decreased as it has become relatively cheaper for companies to fund themselves directly in the market.<sup>18</sup> In the market for asset-backed commercial papers (ABCP) liquidity is still subdued, particularly for maturities between six and twelve months. The reason is that demand from US money market mutual funds that used to buy large volumes of ABCP has decreased. In the market for Euro Commercial Papers (ECP) issuance seems to have stabilised at a lower level compared with the period up to autumn 2008 (see Chart 1:6). It is almost exclusively companies with high credit ratings that account for the outstanding volume of ECPs.

**Chart 1:5. Outstanding volume of commercial paper issued in the United States**  
USD, billions



Source: Reuters EcoWin

**Chart 1:6. Outstanding volumes of Euro Commercial Paper**  
USD, billions



Source: Euroclear

<sup>17</sup> These markets are an important source of short-term financing for Swedish banks and companies.

<sup>18</sup> The Federal Reserve has introduced three programmes of measures directed at the commercial paper market; the Commercial Paper Funding Facility (CPFF), the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) and the Money Market Investor Funding Facility (MMIFF). The MMIFF was discontinued in October since the number of participants was small. The CPFF and AMLF have been prolonged until February 2010. See the Financial Stability Report 2009:1 for a description of these programmes.

## Developments on the repo market

**The repo market is an important source of funding for banks and other financial institutions. The importance of this market increased in the years preceding the financial crisis but has since declined in extent in several countries. This box describes developments on the repo market during the financial crisis.**

A repo is a transaction that combines the purchase of a security with a promise to sell back the security at a predetermined price on a predetermined date. Repos are used to acquire liquid funds or securities. In the most common form of repo transaction, the owner of a security wants to acquire liquidity and therefore arranges to "repo out" the security in exchange for cash. As the security acts as collateral for the loan, the interest rate is normally lower than for a non-secured interbank loan. A repo thus represents an inexpensive funding alternative.

A repo can also act as an instrument that is used to acquire a specific security. Such a transaction is called a reverse repo. In this case, the cash is regarded as collateral for the loan of the security. As ownership of the security is transferred to the counterparty in the repo transaction, the security can be sold on. This means that an investor can repo in a security against cash and then sell the security in the hope that it will be possible to buy it back later at a lower price. This means that repos can also be used to speculate in falling security prices.

### *Increased repo funding*

Between 2002 and 2007, the repo markets around the world grew dramatically. The outstanding volume of repos in the USA increased by 50 per cent in this period.<sup>19</sup> One of the factors that contributed to this was the strong growth on the markets for securitisation in, above all, the USA. As, primarily, investment banks transformed a large part of the assets on their balance sheets into securities in a

securitisation process, they were able to use these securities as collateral in repo transactions. And, as the repo market represented an inexpensive funding alternative, funding was increasingly shifted to the normally very short-term repo market. This created significant differences in the maturities for the banks assets and debts.

The repo markets also enabled an increase in leverage ratios at low costs. By exchanging securities for liquidity in repo transactions – liquidity which was then used to invest in new securities which in turn were exchanged for more liquidity, and so on – a spiral was created which made it possible to build up high levels of leverage. It was not possible, however, to borrow against the full market value of an asset without performing a haircut as normal.<sup>20</sup> The low risk premiums in the years preceding the financial crisis meant, however, that the haircuts on the repo market were extremely low, which enabled high leverage ratios at low costs.

The US investment banks were thus able to use the repo market to significantly increase the difference between the maturities of assets and liabilities and at the same time increase the leverage ratios. This left the banks exposed to the risk that liquidity on the repo market would disappear. As the repos often had a maturity of only one day, the investment banks needed to have access to the repo markets on a daily basis in order not to fail.

### *The financial crisis has led to higher haircuts*

When the financial crisis began, the counterparty risk on the financial markets increased at the same time as there was an increase in the need for liquidity, which in practice resulted in the interbank market being closed to several participants. More and more participants turned instead to the repo market for funding.

However, uncertainty regarding the valuation of, primarily, securitised assets

<sup>19</sup> Hördahl, P and King, M (2008), "Developments in the repo markets during the financial turmoil", BIS Quarterly Review, December.

<sup>20</sup> A haircut of, for example, five per cent means that one may only borrow SEK 95 against a security that has a market value of SEK 100. The remaining SEK 5 must then be funded using one's own capital.

made it increasingly difficult to conduct repo transactions for anything other than very high-quality securities. The haircuts for risky securities increased dramatically and structured products completely lost their status as collateral on the repo market.<sup>21</sup> As a result, the funding for many major international banks also disappeared and they experienced what in practice was a bank run.<sup>22</sup>

As the investment banks had shortened the maturities for their liabilities at the same time as they built up high leverage ratios, they were very quickly and strongly affected by the increased haircuts, especially for securitised assets. This led to dramatic falls in the prices of structured products, which in turn led to even higher haircuts and then to further price falls. The shortage of liquidity and the decreasing values of the banks' assets in the form of structured products threatened their solvency. Consequently, investors were unwilling to lend money to the banks. They were instead only prepared to trust reverse repos with government securities as collateral for short-term investments for liquidity. This generated stress on the repo markets in the form of a substantial increase in the demand for government securities and falling repo rates.

*The European and Swedish repo markets have been less affected than the US market*

Developments on the European repo markets have been much less dramatic than those on the US market. One possible explanation for this is that before the crisis there was no active market for repos with structured products in Europe, which may have reduced dependence on funding from this market. This may be due to the fact that the European Central Bank had less strict collateral requirements and a broader range of counterparties than other central banks. This meant that more participants could fund structured products at the central bank and

that the impact of the repo market refusing to accept risky securities was thus much weaker than in the USA.

Developments in Sweden have been similar to those in Europe. Up until the autumn of 2008, the most noticeable effect of the crisis was that foreign participants, who had previously accounted for a large part of the turnover, left the Swedish repo market. These were above all international hedge funds, but also investment banks, who suffered the effects of the financial crisis earlier than the Swedish participants.

However, after Lehman Brothers filed for bankruptcy protection the Swedish repo market was also affected more directly. Investors were only prepared to accept government securities, which made it difficult to conduct repo transactions for covered bonds. Instead, there was a substantial increase in the demand for Swedish T-bills on both the spot and repo markets. The Swedish National Debt Office therefore released a large number of T-bills onto the market via repos and extra new issues. The Office then used the money this brought in to conduct reverse repo transactions in covered bonds, which improved the funding situation for these securities.

*Limited activity on the repo markets*

Although there are differences between how things have developed in different countries, it has generally become more difficult and more expensive to fund risky securities on the repo markets, and turnover is still low. The increasing costs have contributed to higher risk premiums on the spot market. The situation on the repo markets has eased, however, in line with the recent general improvement in the situation on the credit markets. At the same time, government guarantee programmes and long-term loans from the central banks have contributed to the lower level of activity on the repo market. This is because the need to "repo out" securities in

<sup>21</sup> Structured products consist of pools of securitised loans.

<sup>22</sup> A bank run occurs when a large number of bank customers withdraw their deposits from the bank because they believe the bank is, or may become, insolvent.

order to acquire liquidity has declined. Moreover, interest in speculating in falling prices for government securities and other high-quality debt securities has been low because interest rates have fallen and are expected to remain low for some time to come. Another reason is that many banks are unwilling to build up high leverage ratios. Given that these circumstances continue to prevail, it is expected that activity on the repo markets will continue to be low.

However, it is not certain that turnover

or the risk premiums on the repo market will return to the levels that prevailed before the crisis within the near future. In the light of the many and extensive international regulation proposals that are now under discussion, it is difficult today to believe that it will be possible in future for participants to significantly increase their leverage ratios, since this will expose them to liquidity risks. However, the repo market will continue to be an important source of funding for many institutions.

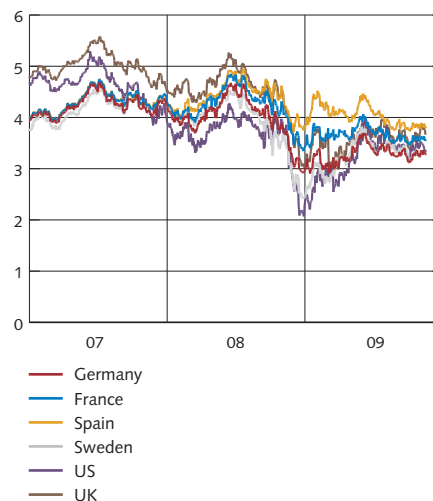


## The development of the bond market

**High demand for government bonds has led to somewhat lower bond yields since the summer** (see Chart 1:7). Expansive fiscal policy and extensive government measures have entailed large public finance deficits and increased central government debt in a number of countries. The supply of government bonds has increased in many countries in order to fund these deficits. All other things being equal, an increased supply entails downward pressure on prices thereby raising the bond yields. The increased supply has, however, been met by high demand for this type of safe assets. It can be partly traced back to the plans for a new global standard for liquidity management, which led to banks buying liquid securities such as government bonds as a preventive measure (see the box The International Regulation Agenda). In combination with central banks' purchases of government bonds, this has meant a fall in yields in the past six months, both in the US and in Europe, despite the increased supply.<sup>23</sup> Swedish bond yields have also fallen somewhat, partly as a result of the Riksbank's three fixed interest rate loans in connection with the monetary policy decisions in July, September and October. Future developments will probably be affected by the fact that the governments of several countries will need to continue to issue large volumes of government bonds. In some markets, such as the US, there is concern as to how the market will be affected by the substantial increase in central government debt. In this context there is a risk that the government borrowing requirement will crowd out corporate funding opportunities.

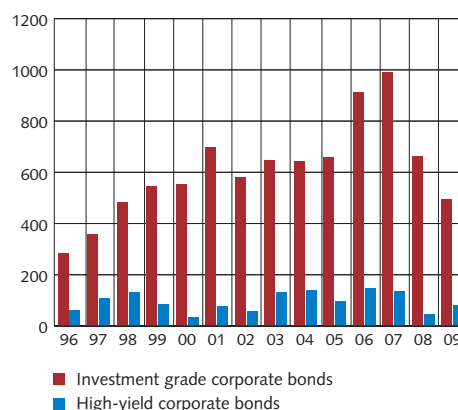
**Investment grade corporate bond issuance is still high compared with the end of 2008.**<sup>24</sup> Until October this year issuance of investment grade corporate bonds in the US market was almost USD 630 billion, compared with USD 610 billion for the same period during 2008 (see Chart 1:8). In the European market issuance volumes in September were about EUR 210 billion, which is a sharp increase compared with previous years.<sup>25</sup> The majority of issues in the European market had medium-quality ratings and maturities of four, five or seven years. Large issuance volumes with longer maturities and lower costs indicate that the situation in the European market for corporate bonds has improved. This is also reflected in the level of the risk premium measured as the difference between the corporate bond yield and the yield on a government bond, the credit spread, is back at the same

**Chart 1:7. Ten-year government bond yields in various countries**  
Per cent



Source: Reuters EcoWin

**Chart 1:8. Issuance of corporate bonds in the American market**  
USD, billions



Note. The issue volume for 2009 has been calculated for the period until the end of October 2009.

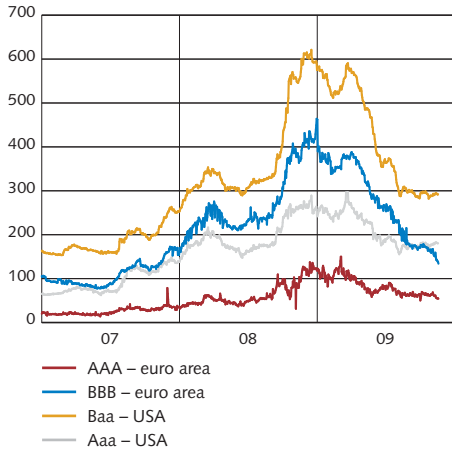
Source: SIFMA

<sup>23</sup> Currently it is the Federal Reserve, the Bank of England and the Bank of Japan that have bought government bonds.

<sup>24</sup> Investment grade means a credit rating of BBB- or higher, according to Standard & Poor's definition, or Baa or higher, according to Moody's definition.

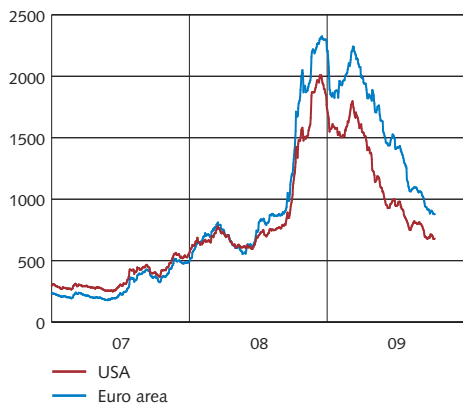
<sup>25</sup> Data from Dealogic via SEB (2009), "Nordic Credit Quarterly", 16 September.

**Chart 1:9. Credit spreads for corporate bonds in the United States and euro area**  
Basis points



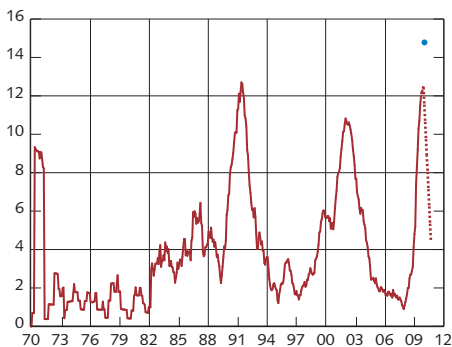
Note. Definition according to Moody's and Standards & Poor's. The chart refers to bonds with a maturity of 10 years for the euro area and almost 30 years for the USA.  
Source: Reuters EcoWin

**Chart 1:10. Credit spreads for high yield corporate bonds in the United States and euro area**  
Basis points



Note. Definition according to Merrill Lynch. High-yield bonds are classified by Moody's/Standard & Poor's as Ba/BB or lower.  
Source: Reuters EcoWin

**Chart 1:11. Actual global default rate and forecast**  
Per cent



Note. The chart shows the proportion of companies classified as Ba/BB or lower by Moody's/Standard & Poor's to default, as the majority of total defaults take place among companies with this classification. The dot refers to the forecast made by Moody's in May 2009.  
Source: Moody's

levels as before Lehman Brothers filed for bankruptcy protection (see Chart 1:9). Another sign in this direction is that the share of issuances with a government guarantee has fallen since the spring. Companies large borrowing requirements despite the recession can be explained by the fact that as a consequence of funding difficulties during the most acute crisis, they have a pent-up need for new funding. The large issuance volumes are probably also linked to the banks' tightened corporate lending during the recession. In addition, demand for corporate bonds has recently risen as investors seek higher yields and diversification opportunities. It is also conceivable that continued low demand for securitised products has been replaced by a rise in demand for corporate bonds.

**High yield companies have gained better access to credit market funding since the spring, particularly in the US.**<sup>26</sup> In the US market for high-yield corporate bonds issuance increased in September compared with the low volumes recorded in 2008 (see Chart 1:8). Also in the European market issuance by high-yield companies has increased after the market having been more or less closed since the autumn of 2007. Total issuance volumes by US, European and UK high yield companies only account for four per cent of the total issuance since the beginning of the year. About one third of these issues were secured by some proportion of the issuer's assets to make the issue more attractive. Both in the US and the European markets for high-yield corporate bonds the risk premium, the credit spread, has decreased (see Chart 1:10). The lower risk premium is partly a result of investors taking greater risks to obtain higher yields but also of a better outlook for companies, which is reflected in a lower expected global default rate. The actual global default rate for high-yield companies was 12 per cent in the third quarter.<sup>27</sup> According to the forecast the default rate is expected to peak at the year-end and then fall sharply until the summer 2010 (see Chart 1:11). This is a lower peak compared with the spring forecast.

**In the market for SEK-denominated corporate bonds issuance has decreased compared with the spring.** On the other hand, the issuance to date this year has increased compared with the same period in 2008. Activity in the market continues to be low, however, with fewer issuers than before the crisis. The share of issues from the non-financial sector has, however, decreased compared with 2008. In some part this can be explained by the fact that non-financial companies have opted to borrow from AB Svensk Exportkredit (SEK) instead of issuing bonds in the market.<sup>28</sup> According to the Riksbank's Company Interviews the general opinion is that access to funding has improved somewhat

26 High yield define corporate bonds classified as BB/Ba or lower according to Standard & Poor's/Moody's definitions. These bonds are also referred to as junk bonds.

27 See Moody's Investor Survey (2009), "October Default Report".

28 AB Svensk Exportkredit has received a capital injection from the government to increase its lending to Swedish companies to facilitate corporate funding. In September SEK's total lending was about SEK 60 billion. About 90 per cent of this was to new customers.

overall.<sup>29</sup> The market for corporate bonds is regarded to some extent as having improved, mainly for shorter maturities, with the exception of large companies that were able to issue at longer maturities. The cost of long-term borrowing is still considered to be high, which deters many companies from this segment. All in all, companies consider that the situation in the Swedish credit market has improved but has not yet recovered completely.

**In Europe the market for covered bonds is functioning better than in the spring.** This is illustrated by a larger number of issues, larger volumes and lower costs. The improvement is mainly a consequence of the ECB's purchase programme for covered bonds that started in July 2009. Since the programme started, it has been possible to issue covered bonds in countries where this was previously difficult, if not impossible, such as Spain, France, Germany, Portugal, the Netherlands and Italy. Issues with a government guarantee are increasingly being replaced by covered bond issues, which is the opposite situation from that in the spring. Swedish banks also issue covered bonds in the European market. The cost of this transaction rose during the crisis and is still high (see box "Swapping covered bonds in euro to Swedish kronor – a decomposition of costs).

**The covered mortgage bond market has also improved in Sweden.**<sup>30</sup> This is reflected in more issues, longer maturities and lower costs. According to the Riksbank's risk survey, market participants state that liquidity in the market for mortgage bonds has improved since the spring (see the box Swedish market participants' views of risks and the functioning of the Swedish market). As a result of this the difference between the mortgage bond yields and the yield on government bonds has fallen sharply. (See Chart 1:12). The yield differential provides a measure of the risk premium in the market for mortgage bonds in Sweden, which is currently back at levels prevalent before the most acute crisis in autumn 2008. Despite this, levels are still higher than before the crisis (see the box Financial stress index). Liquidity continues to be low on the secondary market, however. The reason is that at the moment there is a shortage in demand as a result of international investors having deserted the Swedish market.

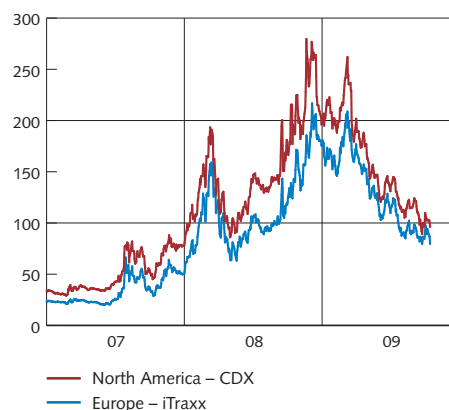
**The cost of insuring against credit risk in corporate bonds is still high from a historical perspective** (see Chart 1:13). Since summer 2009, however, premiums on Credit Default Swaps (CDS) have continued to fall and are now down at the same levels as before September 2008. The premium for a CDS contract corresponds to the cost an investor is willing to pay to protect against potential default in a company's

**Chart 1:12. Difference between yields on mortgage bonds and government bond yields with two and five years maturity respectively**  
Basis points



Sources: Reuters EcoWin and the Riksbank

**Chart 1:13. Premia in the CDS indices**  
Basis points

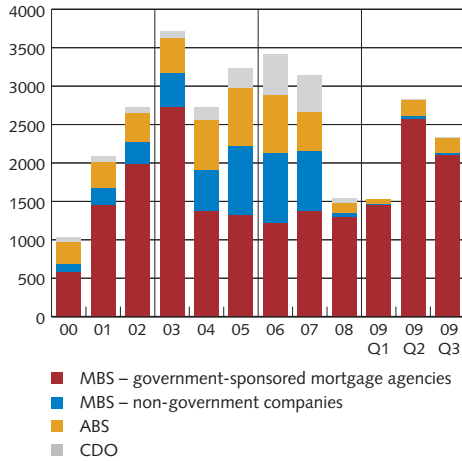


Sources: Reuters EcoWin and Bloomberg

29 See Sveriges Riksbank (2009) "The Riksbank's Company Interviews, September 2009", [www.riksbank.se](http://www.riksbank.se).

30 Here and in the following paragraphs, the term mortgage bonds refers to covered mortgage bonds, as these dominate the Swedish market for mortgage bonds.

**Chart 1:14. Issue volumes on the US market for securitised assets**  
USD, billions



Note. Issuance for CDOs is global. The six quarterly observations in the chart have been restated in annual terms to facilitate comparisons with previous observations.

Source: Securities Industry and Financial Markets Association (SIFMA)

underlying assets, thereby reflecting the credit risk of the underlying assets. Development of CDS premiums is closely linked to the situation in the real and financial sector. As the economic outlook improves, investors' willingness to pay for protection against default declines. For more information about how this market has functioned during the crisis and about initiatives to increase the use of central counterparties see the box on Central counterparty clearing.

## The development in the securitisation market

**Issuance volumes in the global market for securitised assets have increased but are still lower than before the crisis** (see Chart 1:14).

The market for securitised assets grew vigorously in the years before the outbreak of the financial crisis in 2007, and became an important source of funding for banks around the world. Moreover, it provided solutions that made risk management more effective.<sup>31</sup> There were, however, deficiencies in the way the market worked, including how assets were valued, which contributed to intensifying the financial crisis.<sup>32</sup> Regulations on these issues are now being discussed all over the world. Nonetheless, if handled correctly securitisation has great advantages that can also affect the Swedish financial system, even though Swedish banks do not use this market to any great extent for their funding purposes. In 2008 issuance of securitised assets fell globally. Issuance of Collateralised Debt Obligations (CDO) and the assets constituting collateral for their cash flows fell particularly steeply.<sup>33</sup> This was in part because credit ratings for securitised assets fell and confidence in them decreased. In 2009, however, activity in the market increased somewhat. Prices have risen and credit spreads have fallen on various types of securitised assets, including CDOs and their underlying assets. Trading in these assets has also increased. At the same time several countries, including the United States, have introduced support measures for securitised assets in the form of guarantees and programmes. Without these programmes activity would probably have been considerably lower. In other respects the market for securitised assets has been characterised by liquidations and some successful restructuring and sale of previously unsalable securities.

31 The idea behind securitisation is that the credit risk of a portfolio of claims is less than the total credit risk of the individual claims. By selling such portfolios of claims banks can increase their leverage while spreading credit risks in the financial system.

32 See Johansson, W. M., Nyberg, L., and Persson M., (2008), "Oron på de finansiella marknaderna – orsaker och konsekvenser", Economic Review 2008:1, Sveriges riksbank.

33 A CDO is a security bearing interest based on cash flows from different underlying fixed income securities.

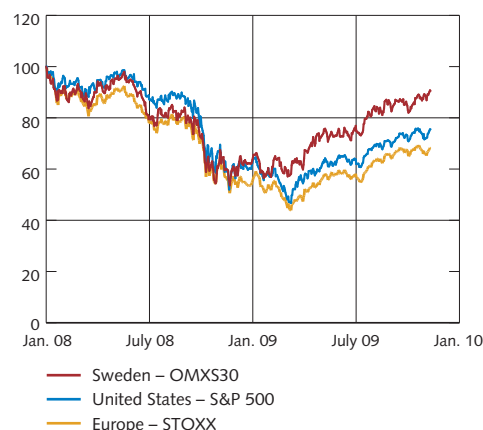
**After almost entirely disappearing during the crisis, issuance of Mortgage-Backed Securities (MBS) by non-government issuers in the United States started to recover in 2009.** MBS are common underlying securities in CDOs, in which the cash flows derive from a large number of mortgages. The increased volumes are mainly due to previously worthless MBS being restructured and sold on as assets with high credit ratings. The volume of MBS issued by non-government companies in Europe was at a higher level than in the US. However, the European issues have been made almost exclusively for the purpose of allowing these securities to comprise collateral for the liquidity facilities provided by central banks. The modest volumes of CDO issues are also to a great extent an effect of being used as collateral for supporting loans from central banks. MBS issues by government-sponsored mortgage agencies in the United States have maintained a relatively high level even recently. This is a consequence of these securities basically being government-guaranteed.

**Issuance of Asset-Backed Securities (ABS) without real estate as collateral have been relatively stable.** ABS is another common underlying asset in CDOs, whose cash flows derive from a number of underlying assets of various kinds. The stable level is partly due to the US government programme (TALF) established to support issues of ABS and which led to a fall in ABS credit spreads.

### Strong development on the stock market

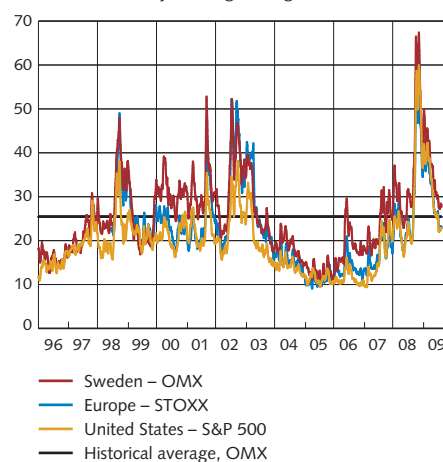
**The development on the stock market has been characterised by a strong recovery in equity prices and lower volatility.** The negative trend at the beginning of the year ended in mid-March 2009 and since then equity prices have continued to rise (see Chart 1:15). This applies both in Sweden and abroad. An improved economic outlook combined with surprisingly strong company reports have contributed to the positive development. An increasing number of investors has returned to the stock market to profit from higher returns than on safer investment alternatives such as government securities. The stock market rally may also indicate that there is ample liquidity in the system. At the same time price fluctuations decreased compared with 2008 and early 2009, which is illustrated by a fall in the implied volatility (see Chart 1:16).<sup>34</sup> This can be partly traced to the improved economic outlook and increased confidence in financial markets. This has also influenced the valuation of companies in terms of P/E-ratios, which have increased recently (see Chart 1:17). This is due to a rise in equity prices at the same time as corporate profits are under downward pressure due to the the current recession. However, P/E ratios are still lower than the historic average prevailing since 1996.

**Chart 1:15. Stock market developments**  
Index, 2 January 2008 =100



Source: Reuters EcoWin

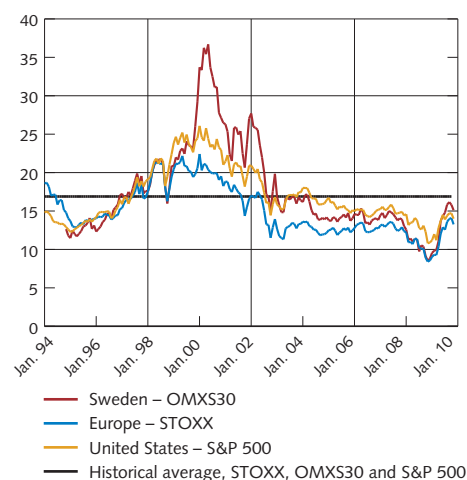
**Chart 1:16. Implied stock market volatility**  
Per cent, 10 day moving average



Note. Historical average covers January 1996 – October 2009.

Source: Bloomberg

**Chart 1:17. P/E ratios**



Note. Historical average refers to the period April 1996 to October 2009.

Source: Reuters EcoWin

<sup>34</sup> Implied volatility describes the market participants' expectations of future variations in stock market prices and is calculated with the aid of share option prices.

**Swedish bank shares have risen considerably more than the stock market as a whole since the beginning of the year.** Hence they have recovered a large percentage of the 2007/2008 stock market decline. The major Swedish banks' market share of the Swedish stock market index OMXS30 was about 20 per cent in September. Since the start of 2009 the beta value for Swedish bank stocks has risen, which indicates that they are riskier compared to the Swedish stock market index since the beginning of 2009.<sup>35</sup> One reason for this could be the banks' exposure to the Baltic countries. During the summer this risk level fell but is still higher than its long-term average. The recent positive development is a sign of improvement in the outlook for and confidence in Swedish banks.

### Summary of risks for the financial markets

**Despite continued improvement in the financial markets it is too early to state that the crisis is over.** Government measures are still supporting the market and it is hard to assess how great a part of the liquidity risk is being kept down by liquidity support measures. At the same time there is continued unease that large credit losses will be realised, which means that lack of confidence between market participants partially remains. Before confidence is completely restored the financial system will be under strain and to some extent dependent on continued support measures. As long as the financial system is still sensitive to individual shocks, negative events or disruptions may trigger new problems. A new shock may in turn threaten the real economic recovery that has started and lead to a renewed deterioration in the world economy.

**The exit from support measures should be successive, in pace with market recovery.** When financial market support measures are phased out, consideration must be given to the linkage between the exit from fiscal policy and monetary policy measures. It is important to identify how the measures are interdependent. Some financial market support measures have been designed to encourage a natural phase-out, for example by making the facility relatively expensive. Some measures have already been discontinued due to improved financial market conditions. For other measures there are signs of lower demand. It is, however, difficult to determine the psychological significance of the remaining support measures. The knowledge of them being there may mean that they are still fulfilling their purpose. The costs of a premature exit may be great, as they were in the United States in 1936 when the depression once again gained a hold on the US economy, since economic policy was tightened too early. On the other hand, a delayed exit could also be costly if it increases inflationary pressure and creates an unjustifiably high level of liquidity in the system. As far as possible

<sup>35</sup> The beta value measures how return on a stock fluctuate compared to a broad stock index.

the phasing out of financial market measures nationally and globally should take place under similar forms and giving consideration to ways in which the measures are interdependent. There is otherwise a risk that opportunities for arbitrage between countries will arise, which would give unwanted capital flows.

The Riksbank has developed two comparable indices for financial stress, an international index and a Swedish index. The aim is to provide an overall picture of the stress level on the financial markets. Instead of analysing each market individually, the indices make it possible to follow the development of the total financial stress level. The method employed to produce the indices is relatively simple and they are therefore intended to be used as a basis for discussion rather than exact measures. One of the indices is based on the Swedish market and the other on the US market, which thus represents the international situation. The indices clearly show that the degree of financial stress has fallen significantly in both Sweden and abroad compared to the situation in the most acute phase of the crisis. However, the stress level is still above the historical average. The outcomes of the indices are described below following a brief presentation of the components and the design of the indices.<sup>36</sup>

### *The components*

There are several examples of indices that measure financial stress. One is the IMF's "Global financial stability map".<sup>37</sup> In its survey, the IMF uses an approach in which macroeconomic risks and risks relating to emerging markets, credit, market and liquidity are measured. The index also assesses the willingness to take risks and the monetary and financial conditions.

The Riksbank's indices are based on developments on the capital market. This market is important as it provides companies and private individuals with funding. The indices are based on components from the stock market, the bond market and the money market, which all form parts of the capital market. The stock market provides companies with funding through IPOs

and new issues. The money market and the bond market offer loans at short-term and long-term maturities respectively. One component has been selected for each market.

Volatility, which is a measure of how much share prices on the stock market vary over time, is used to measure stress on the stock market.<sup>38</sup> Volatility is important in terms of the compensation the market demands for bearing risk, the so-called risk premium. If volatility is high the risk premiums increase and, consequently, the return requirement over and above the risk-free interest rate also increases. This makes funding on the stock market more expensive.

The difference between risk-free and risky interest rates is used to measure stress on the bond market. On the Swedish bond market, the difference between the interest rate for covered mortgage bonds and for government bonds is used (the bond spread). The risk premium on the US bond market is measured using a general bond index.<sup>39</sup> In addition, the so-called TED spread is used as a measure of financial stress on the money market. The TED spread is the difference between the interbank rate which contains risk, and the rate for treasury bills, which is risk free.<sup>40</sup> In periods of financial uncertainty and stress, the banks demand a higher interest rate for unsecured loans. They also ask for high-quality collateral such as treasury bills to a greater extent, which reduces the interest rates for these bills. For these reasons, the TED spread tends to increase in periods of financial stress.

### *The design of the indices*

The respective components in the indices are converted to a common scale. This makes it possible to compare the different measures. When the respective indices are around zero, the

<sup>36</sup> See Sveriges Riksbank (2009) "How has the stress on the financial markets developed? – An index-based discussion", October.

<sup>37</sup> See IMF (2009), Global Financial Stability Report, October.

<sup>38</sup> For the international market, the implied volatility index VIX is used. VIX is based on the prices of options in the S&P 500 index and corresponds to expected 30-day volatility. An equivalent volatility index that stretches back over the same period is not available for the Swedish stock market (OMXS30). 30-day historical volatility is therefore used in the Swedish stress index.

<sup>39</sup> Merrill Lynch BBB rated Corporate Bond Index.

<sup>40</sup> Stibor for the Swedish index and Libor for the international index.



stress level on the market is around the historical average. The components are also allocated equal weights in the indices.

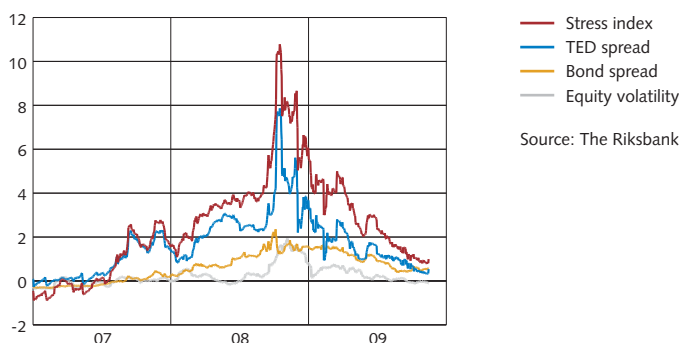
The indices are based on data from a ten-year period running from August 1997 to August 2007 in order to calculate the historical average. During this period, the Swedish and global economies both experienced upturns and downturns, which is a prerequisite for arriving at a representative average. The period that the indices are based on affects what can be perceived as a normal and stable situation. In the period 2003-2007, the risk premiums were low and could not be said to reflect a normal stress level. One should therefore adopt a critical approach to the “normal” level that the indices are based on.

#### Outcomes

Since 2007, both the international and the Swedish stress indices have increased and clearly reflect the financial crisis (see Charts B1 and B2). The indices peaked in September 2008 when Lehman brothers filed for bankruptcy protection. At the start of the crisis, it was predominantly the TED spread that pushed up both indices. This reflected the problems that the banks and other financial institutions were then experiencing in funding their operations in the short term. Subsequently, the bond spreads also increased as the crisis spread to the real economy. The volatility of the stock market also increased dramatically at this point, which indicated that the risk premiums on the stock market were high.

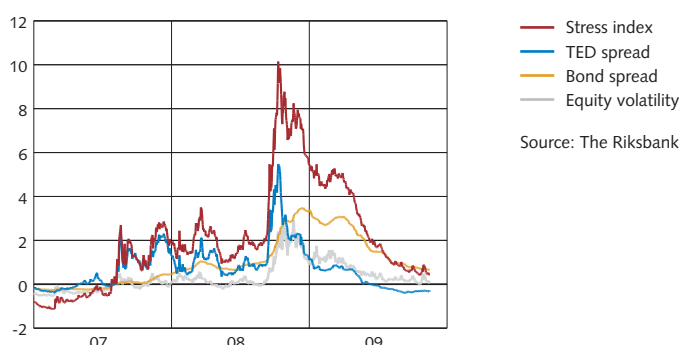
Since the collapse of Lehman Brothers, all the components have fallen. In Sweden, however, both the TED spread and the bond spreads have remained at a relatively high level. Equity volatility has on the other hand declined significantly and has periodically been at historically low levels. The international index has been driven by the bond spreads to a greater extent, as these have fallen back

Chart B1. Swedish stress index



Source: The Riksbank

Chart B2. International stress index



Source: The Riksbank

later than the TED spread and equity volatility. The fact that the TED spread has been higher in Sweden may be because the Swedish banks have been perceived by the market as being more exposed to credit risk. It is also conceivable that the TED spread in Sweden will fall later than in the USA as the crisis hit the Swedish financial markets at a later date.

Even though the Swedish stress index is much lower today than during the most acute phase of the crisis, it is still higher than the historical average. It is therefore too soon to draw the conclusion that the situation on the financial markets in Sweden has stabilised. Furthermore, a range of government support measures are helping to reduce the level of stress on the Swedish financial markets, which means that the stress level may increase again when these support measures are phased out.

**C**ounterparty risks arise naturally in connection with all trade. In the previous Financial Stability Report, an account was given of how infrastructure services can handle counterparty risks.<sup>41</sup> One example of such a service is a so-called central counterparty (CCP) that assumes the counterparty risk in a transaction. The question of central counterparty services has been of particular interest in connection with the trade in credit derivatives in the form of Credit Default Swaps (CDS). This box discusses the problems associated with the settlement of these credit derivatives and how the establishment of central counterparties can reduce these problems. In addition, a number of principles are presented that should be complied with if the positive effects of CCPs are to arise.

The markets for derivatives that are traded bilaterally rather than through an organised marketplace, so-called OTC derivatives, increased dramatically in volume in the years before the financial crisis began. The outstanding nominal volumes of OTC derivatives doubled between 2004 and 2007.<sup>42</sup> In particular, there was a rapid expansion of the market for credit derivatives. As a result of the increase in trading, the participants on these financial markets became increasingly interlinked with each other in a complex network of transactions. The large number of contracts and counterparties made it difficult for the supervisory authorities and for the participants themselves to comprehend the total risk exposure that this trading led to.

When the financial crisis began, risk premiums rocketed at the same time as the counterparty risk increased substantially. This led to a rapid change in the market values of the contracts and the risk that it would not be possible to realise these values increased. In this situation, no information was available on the exact size and distribution of these exposures,

which added to the uncertainty on the financial markets.

This uncertainty was one of the reasons why the Federal Reserve supported the insurance giant AIG which had issued large quantities of credit derivatives in the form of CDS. There was concern that the buyers of these derivatives would incur substantial losses if AIG was unable to meet its undertakings. Due to the high number of contracts and counterparties that AIG had, it was also impossible to determine who might be affected and how the losses could spread. This led to the banks trying to protect themselves against each other's bankruptcies, which resulted in a rising spiral in CDS premiums.

As a consequence of these problems, and to alleviate the problems that the counterparty risks associated with trading in financial derivatives can rise to, the market participants have taken several private initiatives under the supervision of the authorities. These initiatives primarily aim to increase the use of central counterparties, especially for credit derivatives.

*A central counterparty may entail considerable advantages...*

A central counterparty becomes involved following the end of trading as a counterparty to both the parties in a transaction and thus acts as both the buyer and seller in every agreed deal. This means that the central counterparty assumes responsibility for fulfilling all the contracts and thus becomes exposed to the risk that a buyer or seller cannot meet its obligations. Risk management is therefore of central importance to a CCP and is handled using various techniques. The most important are that the central counterparty requires collateral for the deals entered into, sets demands for the participants and itself has sufficient capital to cover any losses that may arise in the event that the collateral does not cover these losses.

41 See Sveriges Riksbank (2009), "Financial Stability Report", June.

42 Source: The Bank for International Settlements

Moreover, the collateral requirement increases in pace with the increase in exposures.

A similar risk management system is also in place between the participants themselves in the case of bilateral trading, although with certain crucial differences. The fact that a central counterparty enters into contracts with both the buyer and seller means that counteracting positions can be netted against each other.<sup>43</sup> This means that the outstanding exposures can be reduced which helps to make collateral management less extensive and more efficient. This can of course be done even without the CCP acting as the buyer and seller. A clearing house can instead manage the collateral, but at the same time the risk between the buyer and seller remains. With a CCP however, the exposures between different participants on the market are eliminated as all the counterparty risk lies with the central counterparty. This therefore reduces the risks between the participants on the financial markets. Settlement through a central counterparty thus has clear advantages compared with bilateral settlement.

To achieve these advantages, however, the central counterparty must be able to handle large trading volumes. At the same time, the concentration risk increases as the size of the CCP increases. These aspects must be weighed against each other when setting up central counterparties and determining their size and number. Other aspects that must be taken into account are competition, legislation and supervisory areas.

*...but central counterparties also have some disadvantages*

As a CCP concentrates risk, the collapse of a CCP could have serious consequences for financial stability. The concentration risk can be mitigated, however, by having a well-developed risk management system in combination with adequate supervision and regulation. It is not possible, however, to create a CCP that can handle infinite losses. The higher the losses

a CCP should be able to handle, the more expensive the trading will be in the instruments settled through it. If the costs become too high liquidity on the market may decrease and the ability to manage risk may be weakened, which could give rise to other problems. Costs must therefore be weighed against safety. Several large non-financial companies that often use OTC derivatives, for example to protect themselves against price fluctuations, have openly expressed concern that too strict demands regarding safety may lead to considerable costs.

It is also the case that central counterparties can only handle standardised products. Tailor-made OTC derivatives will therefore continue to be handled bilaterally. This means that it is important that risk management techniques for, and the supervision of, the derivatives that are traded bilaterally continue to be developed to enable effective trading in these instruments. A weaker capacity to manage and transfer specific risks may lead to the creation of other risks or problems.

Although the need to manage counterparty risks has been the main driving force behind the development of central counterparties on the derivative markets, there may also be other reasons for introducing central counterparties. Most of the central counterparties for other asset types primarily focus on improving the efficiency of trading with financial instruments in various ways rather than on reducing counterparty risks.

### *Conclusion*

Central counterparties can thus perform several functions on the financial markets. If they are well designed, they can help to strengthen financial stability and improve the efficiency of trading in financial instruments. This presupposes, however, that capitalisation, risk management, supervision and regulation are weighed against aspects relating to efficiency and costs.

<sup>43</sup> Netting means that counteracting undertakings are offset against each other so that only the net sum remains.

## The Swedish authorities' new measures<sup>43</sup>

10-06-2009	The Riksbank decides to borrow EUR 3 billion from the European Central Bank (ECB). A previous swap agreement with the ECB under which the Riksbank can borrow up to EUR 10 billion in return for Swedish kronor is used to borrow this currency.
25-06-2009	Together with several other countries, the Riksbank extends its swap agreement with the Federal Reserve. Under this agreement, the countries can borrow US dollars in exchange for another currency.
02-07-2009	The Riksbank decides to offer loans at a fixed interest rate against collateral with a maturity of twelve months. The Riksbank's assessment is that supplementary measures are needed for monetary policy to have the intended effect.
28-08-2009	The Riksbank decides to extend the swap agreement entered into with the Latvian central bank in December last year. The swap agreement entitles Latvia's central bank to borrow up to EUR 500 million against Latvian lats if and when the need arises.
03-09-2009	Lending against collateral in commercial papers is stopped as the demand for these loans has been low.
03-09-2009	The Riksbank decides to offer a second round of loans at a fixed interest rate against collateral with a maturity of approximately twelve months.
22-10-2009	The Riksbank decides to offer a third round of loans at a fixed interest rate against collateral with a maturity of approximately eleven months.
31-10-2009	The government decides to extend the guarantee programme.
05-11-2009	The Riksbank decides to increase the minimum interest rate for variable SEK loans. The supplement over and above the average repo rate is increased to 0.25 percentage points for loans with maturities of three and six months and to 0.30 percentage points for loans with a maturity of 12 months.
19-11-2009	The Riksbank decides to phase-out its dollar lending facility due to low demand and to cancel the auction planned for 8 December.

<sup>43</sup> For a complete list of all the measures taken by the Riksbank see [www.riksbank.se](http://www.riksbank.se).

## Swedish market participants' views of risks and the functioning of the Swedish markets

Swedish market participants consider that the crisis has reached its peak. Risk propensity is continuing to increase among market participants and liquidity is deemed to be better in most submarkets compared with the situation in the spring. On the whole, both the Swedish fixed-income and foreign exchange markets are considered to be functioning well. However, a number of participants consider that the pricing on certain markets continues to be distorted, i.e. the difference between bid and ask prices is greater than previously. This is apparent from the results of the Riksbank's risk survey, which is conducted once every six months. The purpose of the survey is to obtain an overall picture of the view of risk among participants active in the Swedish fixed-income and foreign exchange markets. It also aims to provide an idea of the participants' views of the functioning of the markets.<sup>45</sup>

Below is presented the result of the risk survey answered during autumn 2009.<sup>46</sup> The survey was distributed to 95 participants active on the Swedish fixed-income and foreign exchange markets. These included the Riksbank's monetary policy counterparties and other participants active in these markets. The total response frequency amounted to 85 per cent.

### Market participants' views of the financial crisis

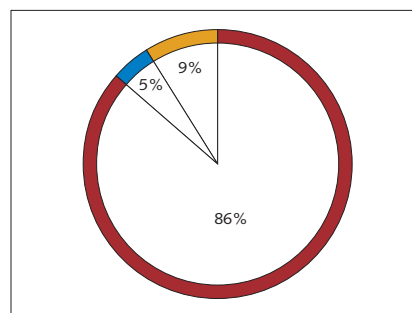
On the whole, the participants are now in agreement that the financial crisis has now reached its peak. This can be compared with the previous survey in which just less than half of the respondents felt that the crisis had reached its peak (see Chart B3). However, a large proportion of the respondents considered that the improved conditions on the financial markets are due to the support measures implemented by central banks and other

government authorities. The participants deem that the most important indicators that can be used to determine whether the functionality of the market has normalised are the development of credit spreads and the difference between interbank rates and treasury bills, together with the development of liquidity on the submarkets. Furthermore, several of the respondents state that one important indicator will be the reactions of the financial participants when central banks and authorities cut back on their measures.

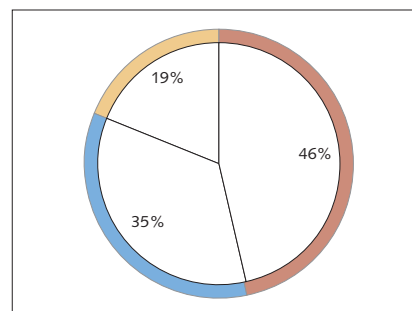
Although most participants now consider the crisis to have passed its peak, the majority do not consider that the functionality of the financial markets has returned to normality. Ninety per cent of participants responded to the question of whether they considered that the functionality of the financial markets has returned to normality. Of these, only 15 per cent considered that a return to normality has

**Chart B3. Do you consider that the financial crisis has peaked?**  
Per cent

Result autumn 2009



Result spring 2009



■ Yes  
■ No  
■ Don't know

Source: The Riksbank

<sup>45</sup> The results of the risk survey are published in their entirety in the report "Swedish market participants' views of risks and the functioning of the Swedish fixed-income and foreign exchange markets" at [www.riksbank.com](http://www.riksbank.com).

<sup>46</sup> The survey was conducted between 21 September and 12 October and is a follow-up of previous risk surveys. The Riksbank's risk survey has been sent out on three previous occasions. Many of the questions recur for the purpose of following developments over time. Other questions are non-recurring, so as to instead capture one-off events and developments that are of interest. The Riksbank commissioned survey company Markör to send out the survey on its behalf.

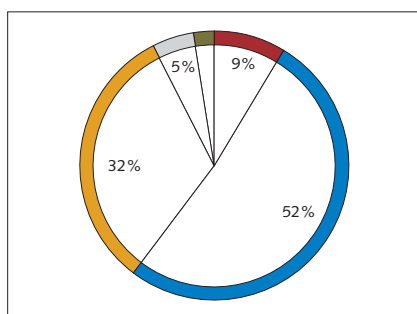
occurred and eleven per cent responded that a return to normality has largely taken place. Four per cent raised questions as to the definition of 'normality', while the remaining respondents considered that the market is not in a position that can be described as normal. Of those answering the follow-up question regarding the point in time at which normality may return, 35 per cent stated that they believe this will be reached at some point during the years 2010–2011, while twelve per cent considered that it will take several years to reach this point.

#### *Risk propensity is continuing to increase*

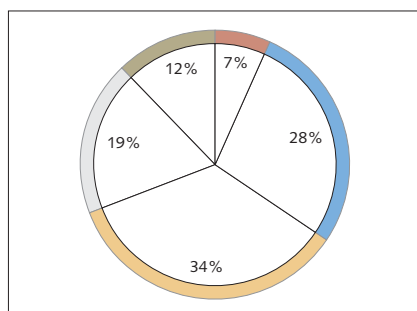
In the previous survey, approximately 35 per cent of respondents stated that their risk propensity had increased, while 35 per cent described it as unchanged. This survey indicates a clear increase in risk propensity during the period and the majority, 61 per cent, of respondents stated that their risk propensity had increased over the most recent six month period (see Chart B4). Thirty-two per cent of

**Chart B4. How has your propensity to take risk changed compared to six months ago?**  
Per cent

#### Result autumn 2009



#### Result spring 2009



- Greatly increased
- Increased slightly
- Neither increased nor decreased
- Decreased slightly
- Greatly decreased

Source: The Riksbank

respondents stated that their risk propensity had remained unchanged, and only seven per cent stated that their risk propensity had decreased during the most recent six month period.

An amount of 23 per cent of respondents still believe that their willingness to take risks will increase over the next six months and 68 per cent believe that their risk propensity will remain unchanged. However, in the previous survey, the equivalent figures were 35 and 60 per cent, respectively. Seven per cent state that they believe that their risk propensity will decrease over the coming six months.

The need for liquidity buffers often increases in times of great uncertainty, a circumstance which has also been reflected in the Riksbank's most recent surveys. Despite the increased risk propensity, 48 per cent of respondents to the autumn's survey state that their institute has increased its buffer of liquid assets compared with the situation six months ago. This is a roughly equivalent proportion to that reported in the spring (see Chart B5). Additionally, 28 per cent responded that their institute's liquidity buffer was unchanged, while 14 per cent stated that it had decreased. While 60 per cent of respondents believe that their buffer of liquid assets will remain principally unchanged over the coming six months, 15 and 16 per cent respectively believe it will increase or decrease.

#### *In principle, liquidity is considered to function better on all submarkets*

This spring's risk survey indicated that the Swedish fixed-income and foreign exchange market was considered, on the whole, to have functioned poorly. However, according to the responses to the autumn's survey, the situation has improved in several submarkets. Certain submarkets are still considered to function better than others. The submarket in which the view of liquidity has changed most is the market for mortgage bonds. Ninety per cent of respondents active on this market judge liquidity to be 'satisfactory' or better, which is a significant

difference from the figure of 45 per cent reported in the spring's survey. It is also a larger proportion compared with the period before the crisis developed on a broad front, when 83 per cent of respondents considered that liquidity was 'satisfactory' or better.

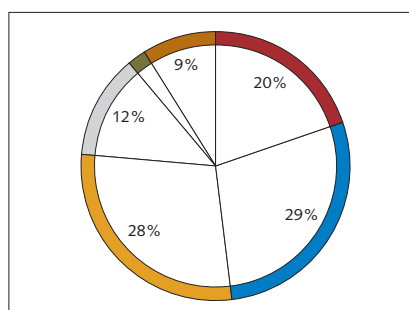
No less than 98 per cent of respondents trading government bonds consider that liquidity on this market is 'satisfactory', while 58 per cent consider that liquidity is better than 'satisfactory'. The repo market is stated to function satisfactorily by 90 per cent of respondents active on this market, compared with a figure of 68 per cent in the previous survey. Liquidity on the mortgage certificate market is certainly deemed to be somewhat better compared with the situation in the spring, but still only half of respondents consider that the market is functioning satisfactorily.

Only liquidity in treasury bills is deemed less favourably than in the spring, when 75 per cent of respondents considered that functionality was 'satisfactory' or better, compared with only 32 per cent in the autumn's survey. One explanation given is the restricted selection of treasury bills outstanding. Since January, the amount of outstanding treasury bills has been more than halved.<sup>47</sup> In 2010, the Swedish National Debt Office expects to increase borrowing in treasury bills, which partially reflects the fact that the adjustment to the decreased loan requirement due to the large budget surplus in 2008 was primarily carried out with treasury bills.

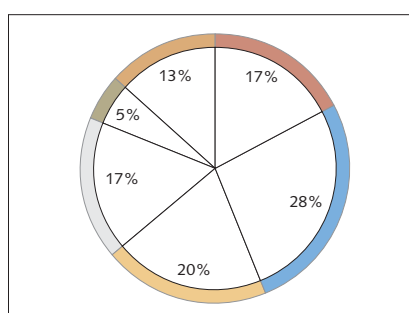
Although liquidity is largely deemed to have improved on the Swedish fixed-income market, a number of participants, in their comments to the questions, state that smaller volumes are still being traded than was the case before the crisis. A couple of participants also emphasise that it is still difficult to sell bonds with elements of credit on the secondary market, while it is currently always possible to find purchasers for new issues. This entails a greater difference between buying and selling prices.

**Chart B5. How has your institution's buffer of liquid assets changed compared to six months ago?**  
Per cent

**Result autumn 2009**



**Result spring 2009**



- Greatly increased
- Increased slightly
- Neither increased nor decreased
- Decreased slightly
- Greatly decreased
- Don't know

Source: The Riksbank

The responses to the survey also indicate that the functioning of the foreign exchange market is generally considered to have improved over the most recent six months, as compared with the situation prevailing during the previous survey. A figure of 78 per cent of the respondents of the autumn's survey describe the functioning of the SEK market as 'satisfactory' or better, which can be compared with 49 per cent of respondents holding this opinion in the spring. This is in line with the situation last autumn, but is still fewer than during the spring of 2008, before the crisis had spread to the Swedish market, when the figure amounted to 92 per cent. Even in an international comparison, the SEK market is considered to have functioned better. However, many respondents, just as in the spring, describe liquidity as irregular and state that it is difficult/expensive to trade large volumes.

<sup>47</sup> The outstanding amount of treasury bills was SEK 145.8 billion on 31 January 2009, compared with SEK 62.5 billion on 30 September 2009.

*The participants' views of future developments*

Regarding the issue of what will be in focus in the Swedish financial markets in the near future, a majority of respondents specify the development of the repo rate and the economic recovery. Several respondents also consider that companies' quarterly reports and profits will receive great attention. A smaller proportion than in the spring's survey believes that the Baltic countries will be in focus. A further area that will be in focus over the next six months is that of exit strategies from the extraordinary measures implemented during the crisis.

Even if the Baltic countries are not expected to be in focus in the near future, developments in these countries continue to be mentioned most frequently in the respondents' replies to the question of which risks they foresee for the Swedish financial markets in the next six-month period. The manner in which economic activity will develop in the near future and the risk that it may fail to increase or may develop below expectations are also mentioned as risks for the near future. Certain participants also consider that there exists a risk that the current expansionary monetary policy may be retained too long, considering that such a development may, in turn, lead to the formation of asset bubbles, while another small number of participants see a risk that the Riksbank may start to raise interest rates too soon. Asset bubbles are also the development to cause the

most concern over the long term, either in the form of excessive debt among households or in the form of a property bubble. However, many of those responding to the question on longer term risks state that they do not see any major risks. There also exists a certain degree of concern that new regulations may be too far-reaching. A small number of participants also state that a decreased risk propensity in the long term may result in Sweden, with its minor and volatile currency, becoming a peripheral country, and that capital inflow, consequently, may decrease. In the long term, this may cause poor liquidity with the result that the market will cease functioning.

A widespread opinion among the participants in the Riksbank's survey is that the financial crisis will lead to new regulations and legislation on capital and liquidity reserves. Several participants also reply that risk awareness among both companies and investors has increased. Furthermore, it is believed that risks will be reflected in prices to a greater extent than previously, i.e. risk premiums will vary more, not only for different instruments, but also between different borrowers.

Regarding the issue of whether there exists a need for a central counterparty in the Swedish repo market, approximately half of respondents on the fixed income market provide a response. Of these, the majority, 64 per cent, consider that there does exist a need, while approximately 20 per cent consider that there is no need. The others respond that such a need may exist.



### The Swedish banks' borrowers – in brief

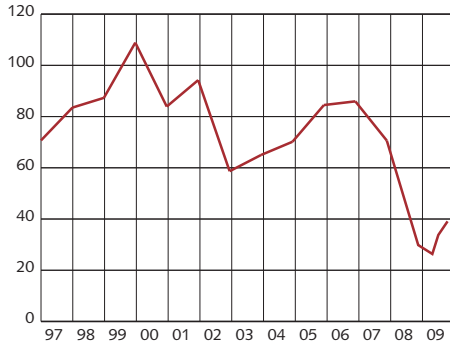
The recovery has begun in the world economy and Sweden, and GDP growth looks to be stronger than many were expecting in June when the previous Financial Stability Report was published. However, future developments are uncertain and the recovery will take time. At the same time the financial markets are functioning more smoothly. This means that, on the whole, conditions for the Swedish banks' borrowers have improved compared with June, although the outlook for the various borrower groups varies.

Swedish households have continued to borrow, despite the weak economic activity and increasing unemployment. It is assumed that gradually higher interest rates will lead to a slight deterioration in debt-servicing ability. However, debt-servicing ability is expected to remain good. This also applies to households in the other Nordic countries and Germany. Stress tests for Swedish households show that they have the capacity to manage both higher interest rates and rising unemployment. However, this does not rule out the possibility of indebtedness becoming a problem for individual households further ahead when the interest rate is raised, which could entail effects on the real economy.

Although things now look slightly brighter, bankruptcies in the Swedish corporate sector will remain at a relatively high level in the future. Compared with the situation in June, however, bankruptcies are not expected to continue increasing. Instead, there is now a clear recovery scenario pointing towards Swedish companies' credit risk declining for most of the forecast period. However, credit risk remains at a higher level than prior to the financial crisis. This also applies to the Swedish property companies. Developments among companies in other countries are expected to follow a similar pattern to Sweden, although there are differences between countries.

Economic activity in the Baltic countries has remained very weak and the recovery is expected to be protracted. The percentage of households and companies defaulting on payments is increasing rapidly, and is expected to continue rising over the coming years. This means that credit risk in the Baltic countries has increased recently. At the same time, there are substantial differences between the countries. Estonia has greater potential to manage its problems than Latvia and Lithuania, partly because it has the fiscal policy capacity to cover increasing deficits in the national budget.

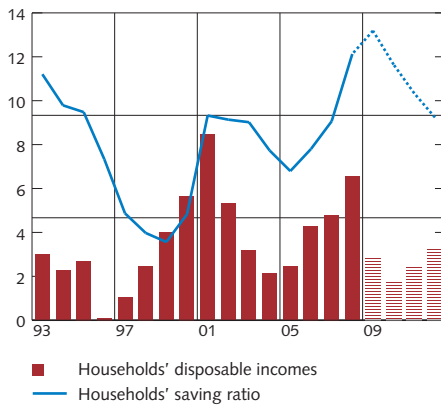
**Chart 2:1. Households' financial net wealth**  
Percentage of disposable income



Note. Households' financial net wealth corresponds to households' financial assets minus their financial liabilities. Households' collective insurance savings (including Premium Pensions) and tenant-owner shares are also deducted from financial assets. Third quarter refers to the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank

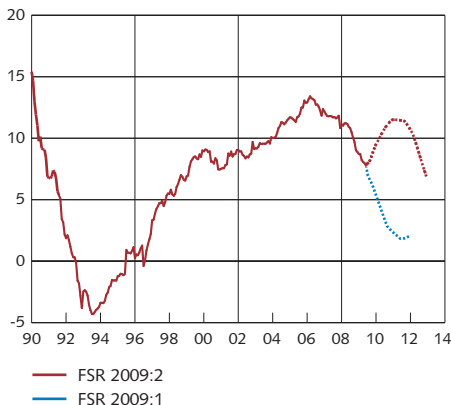
**Chart 2:2. Households' nominal disposable income and saving ratio**  
Annual percentage change and percentage of disposable income



Note. Households' savings in relation to disposable income. The broken line and striped bars show the Riksbank's forecast as presented in the Monetary Policy Report, 2009, October.

Sources: Statistics Sweden and the Riksbank

**Chart 2:3. Households' total borrowing from credit institutions**  
Annual percentage change



Note. The broken lines show the Riksbank's forecast.

Source: The Riksbank

An important part of the analysis of financial stability is following developments among the banks' borrowers. This is because the risk that borrowers will be unable to pay their debts is one of the largest risks faced by the banks. In addition, the banks' results are directly affected by loan volumes, through their effects on interest income.

This chapter analyses the debt-servicing ability and borrowing of the respective borrowers, with the aim of assessing the outlook for the Swedish banks. The chapter begins with an analysis of the Swedish household sector. This is followed by an analysis of the corporate sector. Property companies are dealt with in a section of their own, which also includes developments in the commercial property market. The chapter concludes with an analysis of the borrowers in markets abroad where the banks are active.

## The Swedish household sector

This section describes Swedish household sector borrowing and debt-servicing ability and potential future developments in this sector. As more than 85 per cent of household loans have property as collateral, we also analyse developments in house prices.

**Households' financial net wealth has increased and disposable incomes are continuing to rise, which points to a continued good economic situation for households.** The increase in financial net wealth is due to households' financial assets being positively affected by the positive developments in stock markets since the beginning of the second quarter. Households have so far regained almost 30 per cent of the financial net wealth they lost during last year's stock market fall, despite their loans with credit institutions increasing during this period (see Chart 2:1). In addition, households' disposable incomes are expected to continue to increase, despite the strained situation in the labour market. Similarly, household saving is expected to remain high (see Chart 2:2).<sup>48</sup>

**Households' borrowing from credit institutions increased by 8.2 per cent in September and is expected to continue to increase at a rapid rate for some time to come** (see Chart 2:3). This is mainly because of the historically-low interest rates, which mean that households currently have the opportunity to take on much larger loans than they would have otherwise. Households' mortgages are now rising at a much higher rate than total borrowing. One reason may be that households are stimulated by the temporary tax deductions for building work ("ROT-avdrag") to take out further mortgages on their home to renovate them. Loans for consumption using housing

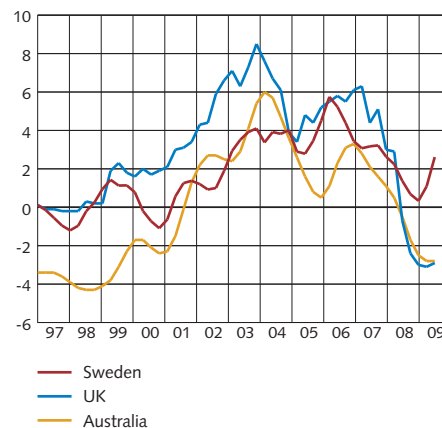
48 See Sveriges Riksbank (2009), "Monetary Policy Report 2009", October.

as collateral also increased relatively substantially during the first and second quarters (see Chart 2:4).<sup>49</sup> A further result of the current interest rate situation is that almost 70 per cent of the households that signed new loans in September chose to sign them at a variable interest rate (see Chart 2:5). One factor that has had the opposite effect on household borrowing is that the banks tightened their lending standards for households as the financial crisis intensified last autumn.<sup>50</sup> The banks have, for instance, reduced the maximum loan-to-value ratios in their credit policy, at the same time as they are less frequently granting interest-only loans. A survey shows that the percentage of loans with a loan-to-value ratio of more than 80 per cent in the total mortgage portfolio fell during 2008.<sup>51</sup>

**The economic cycle appears to have bottomed out and households are now more optimistic regarding both their own finances and the Swedish economy than they were last spring.**<sup>52</sup> This also contributes to the expectation that households' borrowing will increase at a high rate over the coming years. As interest rates rise further ahead, this rate is expected to slow down. Another factor indicating that household borrowing will increase at a rapid rate is that their disposable income is expected to continue to rise during the forecast period. The banks are at the same time more willing to lend to households than, for instance, companies, as they then increase their risk-weighted assets to a lesser extent. In addition to slightly brighter economic outlook and a lower interest rate than in June, the household sector has so far proved to be more sensitive to interest rate changes than expected, while the falling employment has had less influence on borrowing. This is also a factor that has contributed to the current assessment that household borrowing in the coming period will increase more than assumed in the previous Financial Stability Report.

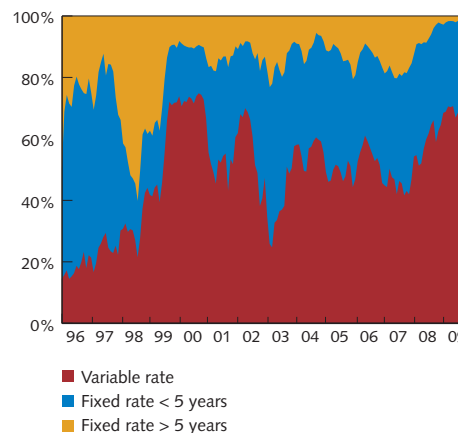
**Although households' debt ratio is expected to increase, it is assumed that their interest ratio will be relatively low over the coming years, which means that households will still have good debt-servicing ability** (see Chart 2:6). At the end of June, household debt amounted to 159 per cent of disposable income.<sup>53</sup> At the same time, households' post-tax interest expenditure has fallen to 4.5 per cent of disposable income. The continued high borrowing rate among households is expected to lead to their debt ratio continuing to increase for a further period of time. However, as the Riksbank raises the repo rate, the banks will also raise their interest rates and

**Chart 2:4. Consumer credit with housing as collateral, as a percentage of disposable income**  
Per cent



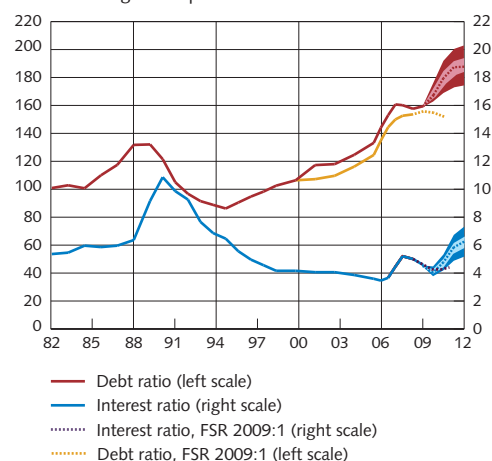
Note. Housing equity withdrawal is calculated as the difference between net borrowing secured in dwellings and housing investment.  
Sources: Reserve Bank of Australia, Reuters EcoWin, Statistics Sweden and the Riksbank

**Chart 2:5. Breakdown of households' new loans by fixed interest period**  
Per cent



Source: The Riksbank

**Chart 2:6. Households' debt and post-tax interest expenditure**  
Percentage of disposable income



Note. The broken lines represent the Riksbank's forecast.  
Sources: Statistics Sweden and the Riksbank

49 Housing equity withdrawal is the difference between net borrowing secured in dwellings and housing investment. It arises, for example, when a home-owner increases the mortgage on an existing property but uses the money for something other than to improve their home or buy an additional property, such as consumption, perhaps. It may also arise when a household moves to a cheaper home, but reduces the loan on the home by a smaller amount.

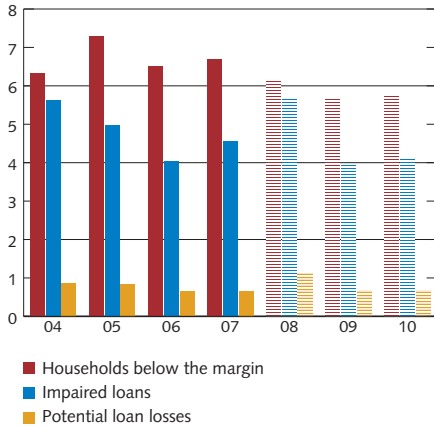
50 See ALMI Företagspartners Bank lending surveys for April, June and September 2009.

51 See Finansinspektionen (the Swedish Financial Supervisory Authority) (2009), "Developments on the mortgage market".

52 See, for example, the National Institute of Economic Research (2009), "Economic Tendency Survey, Consumers, October".

53 As of June 2009, accrued taxes are included in the financial accounts. Households' debt ratio has been revised as far back as 2001, which explains the upward shift in the debt ratio.

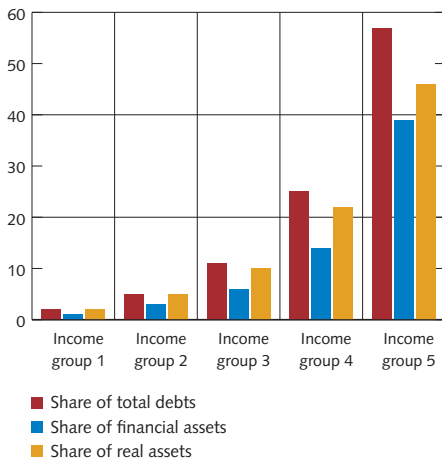
**Chart 2:7. Households below the margin, impaired loans and potential loan losses**  
Per cent



Note. The proportion of households below the margin denotes the proportion of indebted households that do not have a reasonable standard of living after they have paid interest and other housing costs. The proportion of impaired loans denotes these households' share of the household sector's total debt. Potential loan losses is the share of the debt held by households below the margin that is not covered by wealth. Striped bars indicate data generated by the Riksbank.

Sources: Statistics Sweden and the Riksbank

**Chart 2:8. Percentage of debt and assets held by indebted households in different income groups**  
Per cent



Note. Income group 1 consists of the indebted households with the lowest disposable income and income group 5 consists of the indebted households with the highest disposable income. Before micro data is utilised, the households are divided into equally-sized groups, after which data from those households with no debts is excluded.

Sources: Statistics Sweden and the Riksbank

the interest ratio is therefore expected to increase over the coming years, while the debts on which households pay interest will be much higher. In addition, unemployment will continue to rise for some time to come. Although this points to a slight deterioration in debt-servicing ability, the debt-servicing ability of the household sector as a whole is expected to remain good. However, households' scope for consumption other than housing could be affected, depending on how their debt-servicing ability deteriorates when interest expenditure increases. This would probably affect parts of the real economy.

#### The proportion of households unable to meet their interest expenditure and other day-to-day costs declined last year (see

Chart 2:7). This is illustrated by the Riksbank's own calculations using micro data on households' finances.<sup>54</sup> However, the situation for the households with the lowest incomes deteriorated. Their incomes did not increase as much as those of households with higher incomes, while interest expenditure increased for all income groups. However, it is important to mention that households with lower incomes account for a very small share of the household sector's total loan stock (see Chart 2:8). One change compared with previous years is that the proportion of vulnerable households increased in the group with the highest incomes. This indicates a higher risk as these households account for a good 57 per cent of households' total liabilities. However, it should be added that the value of these households' total assets exceeded the value of their debts.

**Projections and stress tests also indicate that households' debt-servicing ability will remain good.**<sup>55,56</sup> The proportion of vulnerable households is expected to have declined in 2009 compared with 2008, which is explained by households' interest expenditure having declined as mortgage rates have fallen at the same time as incomes have continued to rise. Given the current economic situation, however, it is doubtful whether all income groups have experienced increases in income. The percentage of vulnerable households in the lower income groups is thus assumed to remain relatively unchanged this year, compared with last year.

**The stress tests show that increased unemployment only affects the banks' loan losses to a small extent.** Although the proportion of vulnerable households increases if unemployment rises by six percentage points,<sup>57</sup> the potential loan losses only increase marginally. This is explained by the generous Swedish insurance systems; a household with two incomes, one labour income and one in the

54 For further information on micro data, see the box "Stress test of households' debt-servicing ability", Financial Stability Report 2009:1. Micro data on households' finances is compiled in Statistics Sweden's annual cross-section survey, HEK (household economy). The most recent results refer to 2007.

55 Micro data have been projected using later outcomes of the national accounts and financial accounts and also the Riksbank's forecasts.

56 For further information on stress tests, see the box "Stress test of households' debt-servicing ability", Financial Stability Report 2009:1.

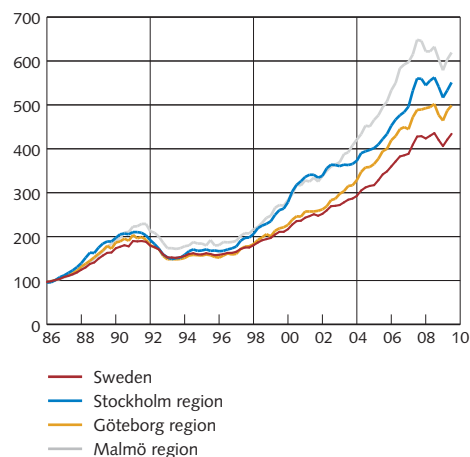
57 In the stress test we examine how households' debt-servicing ability is affected if unemployment increases substantially. This level corresponds to the highest level recorded in Sweden during the 1990s.

form of unemployment benefit, will usually still manage to service its debts at the same time as managing to pay its other day-to-day costs. However, this does not rule out the possibility that the debt-servicing ability of individual households could deteriorate. It could apply, for instance, to households where the person who becomes unemployed is not entitled to unemployment benefit. It can also apply in municipalities with one dominant employer, where the risk of both wage-earners in a household becoming unemployed may be greater. In these municipalities there is a risk that the banks' situation will deteriorate. If unemployment rises substantially within a particular region, it will also have a number of consequences for the real economy.

**According to the stress tests, households' debt-servicing ability is affected primarily by higher mortgage rates.** If households' interest rates increase by six percentage points then the proportion of impaired loans will increase substantially.<sup>58</sup> But higher interest expenditure is nevertheless not expected to lead to households causing the banks larger loan losses, as it is households with high incomes that account for the largest share of the loan stock. Moreover, most of the impaired loans are covered by wealth, which means that if the worst were to happen the banks would regain a large part of the loan, although there is a possibility that the wealth will have declined. On the other hand, households may have to cut back on other consumption than housing if interest expenditure increases to this extent. This also means that the number of households that are unable to cover their day-to-day costs increases when higher mortgage rates coincide with increased unemployment, but this is primarily due to the higher mortgage rates. Households should expect that the repo rate will be raised as economic activity recovers.<sup>59</sup>

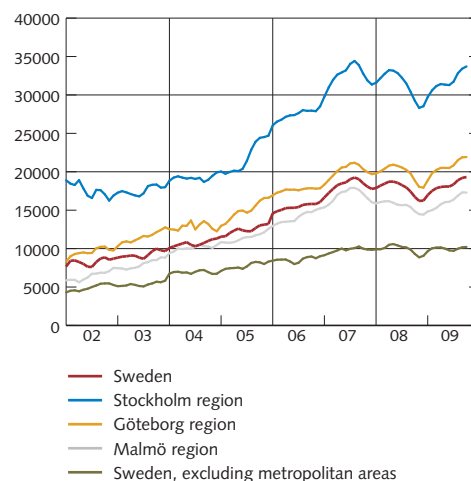
**There are several factors indicating that house prices can continue to rise over the coming year.** House prices in Sweden have increased by a good seven per cent since the lowest point in February (see Chart 2:9). Prices of tenant-owned apartments, which reached a lowest point back in November 2008, have since risen by almost 20 per cent (see Chart 2:10). On an annual basis, however, house prices have remained relatively unchanged, while prices of tenant-owned apartments have risen by around ten per cent. There are several factors indicating that house prices can continue to rise modestly in the coming period (see the box Developments in house prices and the mortgage markets in Sweden and abroad). For those households not affected by unemployment the low interest rates mean that their purchasing power has improved, all else being equal. At the same

**Chart 2:9. House prices in Sweden and the Stockholm, Göteborg and Malmö regions**  
Index 1986 = 100



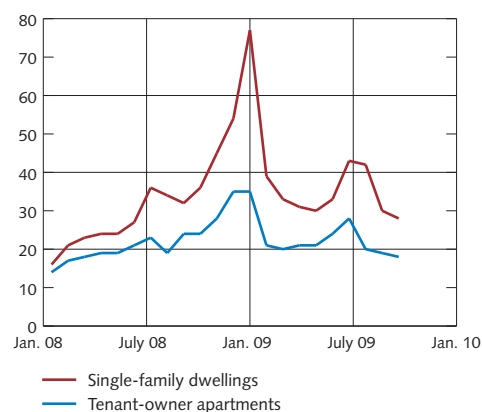
Source: Statistics Sweden

**Chart 2:10. Tenant-owned apartment prices, three-month moving average**  
SEK per square metre



Source: www.maklarstatistik.se

**Chart 2:11. Time to sale in Sweden**  
Number of days, median



Note. The time to sale corresponds to the number of days a property is published on the Internet for sale before being sold and therefore removed from the Internet.

Sources: Hemnet and www.maklarstatistik.se

58 This level has been chosen in the light of the highest levels used by the banks in their own calculations. The stress tests were carried out on data from 2007, where the indebted households' interest expenditure after tax amounted to approximately 5.5 per cent of disposable income. If interest rates increase by six percentage points, households' interest ratio will amount to just over 11 per cent. The interest ratio has not been this high since the beginning of the 1990s, when the interest rates households had to pay were much higher than they have been in the past ten years.

59 See Sveriges Riksbank (2009), "Monetary Policy Report", October.

time, households' disposable incomes are continuing to rise. Since the middle of the year, households are also more optimistic, with regard to both their own finances and the Swedish economy. Times to sale are largely the same as in the spring (see Chart 2:11) and as the supply is relatively low they may decline slightly further in the future. Shorter times to sale mean that there is greater activity in the housing market, which, all else being equal, will lead to rising house prices. The low level of new housing construction is also an important factor behind rising house prices. Although housing construction is expected to increase in the future, there is a relatively long time between the point when a building permit is granted and the point when the housing is complete, which would indicate an unchanged supply in the short term and thereby higher house prices.<sup>60</sup>

**To summarise, households' debt-servicing ability is expected to remain good.** As in the previous Financial Stability Report, the Riksbank's assessment is that the household sector as a whole will not cause any major loan losses to the bank sector. Stress tests show that households in general have the capacity to manage higher interest rates, even if unemployment increases. However, this does not exclude the possibility of individual households suffering payment difficulties. So far, some parts of Sweden are particularly hard hit by falling employment and there households' debt-servicing ability may be much worse than in the country as a whole, which puts the banks in these regions in a more difficult situation. Although households' debt-servicing ability will remain good, increased debts and higher interest expenditure in the future are expected to lead to a slightly weaker development than forecast in the previous Report. The low interest rates are expected to lead to household borrowing continuing to rise at a rapid rate for some time to come. Several factors also indicate that house prices can continue to rise modestly in the coming period. However, in the regions that have been hardest hit by personnel cutbacks it is probable that they will not rise as much.

60 See Sveriges Riksbank (2009), "Monetary Policy Report", October.

## Developments in house prices and mortgage markets in Sweden and abroad<sup>61</sup>

Since the global financial crisis broke out just over a year ago, house prices have fallen around the world. However, in Sweden prices have only fallen by around four per cent, calculated as an annual percentage change, and they have recently begun to rise again. An overall assessment points to house price movements in Sweden being largely justified and to house prices probably continuing to rise further over the coming year. However, the increase in house prices ought to be modest, partly because both households and the banks are assuming that interest rates will return to more normal levels in the future. Below follows a description of developments in house prices and households' debts in Sweden and abroad, as an attempt to explain developments in the Swedish housing market. In addition, similarities and differences in the housing market and in the housing finance markets in Sweden and other countries are illustrated.

From 1995 and twelve years on house prices rose at a rapid rate, both in Sweden and abroad (see Charts B6 and B7). In Sweden, Denmark and Norway house prices more than doubled during this period, while prices increased by around 60 per cent in Finland. House prices also rose substantially in the United States, the United Kingdom, Spain and Ireland. On the other hand, German house prices have remained largely unchanged since the beginning of the 1990s.

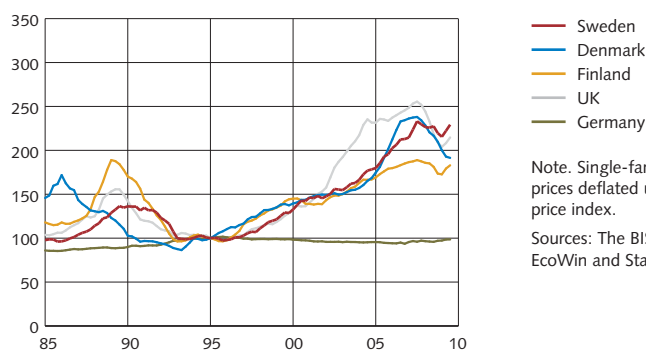
In some countries the increase in house prices came to a halt after the central banks began to raise their policy rates during the years 2004-2005. In the United States the interest rate raises meant that borrowers in the subprime segment, that is, borrowers in the mortgage market with poorer credit history, suffered problems in meeting their payments.<sup>62</sup>

In the wake of the financial crisis there was a globally-synchronised fall in house prices. In the United States house prices have fallen by a good

35 per cent since the peak in spring 2006. After the United States, house prices have fallen most in Ireland, Denmark and the United Kingdom. In Sweden house prices stagnated in autumn 2007 and then fell by around eight per cent. However, over the past six months Swedish house prices have begun to rise again. In Norway, too, house prices fell initially but over the past year have risen by almost eleven per cent.

In some areas prices are still considered to be relatively high. This applies in particular to the countries where the price adjustment has been relatively slight so far.<sup>63</sup>

Chart B6. Real house prices in Sweden and abroad  
Index 1995 =100

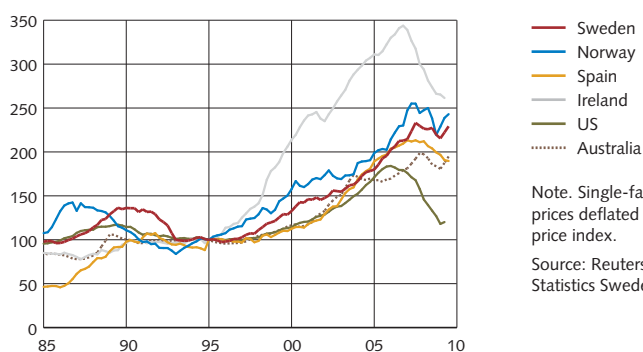


— Sweden  
— Denmark  
— Finland  
— UK  
— Germany

Note. Single-family dwelling prices deflated using consumer price index.

Sources: The BIS, Reuters EcoWin and Statistics Sweden

Chart B7. Real house prices in Sweden and abroad  
Index 1995 =100



— Sweden  
— Norway  
— Spain  
— Ireland  
— US  
..... Australia

Note. Single-family dwelling prices deflated using consumer price index.

Source: Reuters EcoWin and Statistics Sweden

<sup>61</sup> In this box house price developments are expressed in real terms unless otherwise stated.

<sup>62</sup> For further information on the sequence of events, see for instance, Sveriges Riksbank (2007), (2008), "Financial Stability Report 2007:2" and "Financial Stability Report 2008:1".

<sup>63</sup> See IMF (2009), "World Economic Outlook, October 2009". According to the International Monetary Fund's econometric model there is a risk of continued price adjustments, particularly in Ireland, Italy, the United Kingdom, France, Spain, Australia and Sweden.

### Common factors behind the rising house prices

There are a number of common factors that have in all probability affected the upturn in house prices in Sweden and other countries. For instance, both volatility in inflation and interest rates have fallen significantly in many countries since the mid-1990s. Lower interest rates have led to a fall in households' financing costs. Where the lower interest rates have been perceived as long-lasting, households have been able to take out larger loans, which has tended to push up house prices. In many countries the increase in house prices and the increase in households' indebtedness have thereby gone hand in hand (compare Chart B8 with Charts B6 and B7).

Rising disposable incomes in the household sector in many countries have also fuelled house

price increases because households have been able to afford to pay more for their homes. Higher incomes combined with lower interest rates have led to more households gaining access to the credit market, which in turn has helped boost demand for houses and loans.

Demographic factors may also have influenced house price developments. In the United Kingdom and Denmark, there are signs that the proportion of first-time buyers, in relation to the total population, may have a positive impact on house prices. When a large number of first-time buyers enter the housing market, the demand for housing increases, and thus push up prices.<sup>64</sup>

Since the 1990s, there have been substantial changes in the mortgage market, which has also had a positive effect on house prices.<sup>65</sup> For instance, credit institutions have been granting loans with higher loan-to-value ratios for several years now and households can choose between several different types of loan contracts with different terms. This, combined with increased competition in the mortgage market has put pressure on credit institutions' lending margins and mortgage rates have thus fallen.

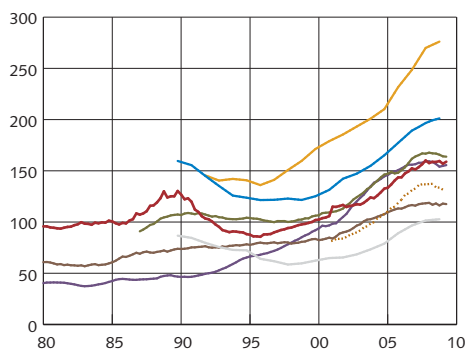
In addition, households are increasingly demanding loans with a variable interest rate (see Chart B9). In many countries the percentage of loans at variable interest rates in relation to the total loan stock has shown a relatively large increase, which implies that households are more willing to take on a larger share of the interest rate risk. In several countries there has also been a growing demand for interest-only loans. Prior to the financial crisis, borrowers in some countries could take out loans with an initially negative amortisation plan. If the total mortgage costs only consist of interest payments, the capacity to take on larger loans increases. And households that have previously been credit constrained have been granted loans to a greater extent. In many countries it has also become common to take



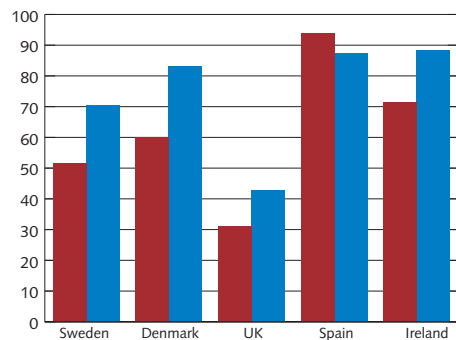
Note. As the markets for housing finance and the proportions of households owning their own homes differ from country to country, it remains uncertain whether any comparison of the various countries' debt ratios provides a completely fair picture.

Sources: The BIS, national central banks, Reuters EcoWin and the Riksbank

**Chart B8. Household debt as a percentage of disposable income**  
Per cent



**Chart B9. Percentage of new borrowing with variable interest rates**  
Per cent



Source: European Mortgage Federation

64 For the United Kingdom, see Pain, S and Westaway, P (1997), "Modelling structural change in the UK housing market: A comparison of alternative house price models", *Economic Modelling*, no. 14, pp 587-560 or Holly, S and Jones, N (1997), "House prices since the 1940's: cointegration, demography and asymmetries", *Economic Modelling*, 14, 549-565. For Denmark, see "Prisstigninger på boligmarkedet", *Økonomisk Tema*, No. 1 August 2005, Økonomi- og Erhvervsministeriet.

65 See, for instance, the Bank for International Settlements (BIS) (2006), CGFS Papers No. 26, "Housing finance in the global financial market", January.



out new loans with housing as collateral when the value of the house has increased (see Chart 2:4).<sup>66</sup>

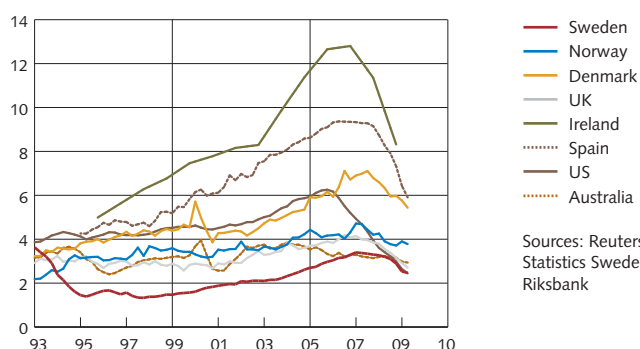
*Why have house prices not fallen very much in Sweden?*

Apart from the similarities discussed above, there are also a number of differences between the housing markets in different countries. There are thus several factors that could explain why house prices in Sweden have so far not fallen as much in the recession as house prices in many other countries. And which moreover indicate that house prices may continue to rise for some time to come.

- *There is largely no buy-to-let sector at all in the Swedish housing market.* The possibility to buy housing for speculative purposes to rent probably affected the upturn in house prices in, for instance, the United Kingdom, Ireland, Australia and the United States, and thus also affected the price fall.
- *Another element in the housing market that does not exist in Sweden to any great extent is lending to households with poorer credit history, what is known as subprime-lending.* This lending was most common in the United States during the years prior to the financial crisis, but also occurs in the United Kingdom and Australia. In 2006 this type of lending accounted for around 15 per cent of US households' total loan stock. As these loans made it possible for more households to take out mortgages, they probably contributed to the earlier upturn in house prices, but also to prices now falling more heavily in the countries where this type of lending was common.

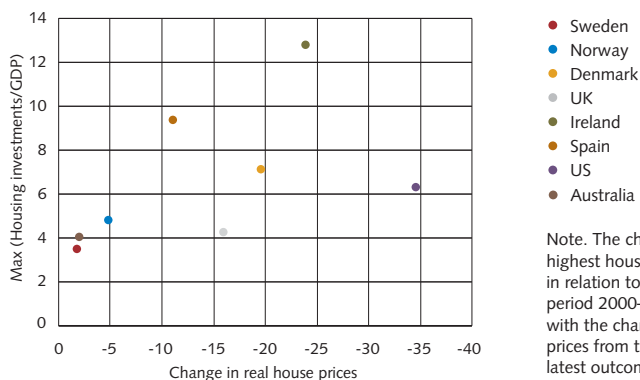
- *Since the 1990s the level of new housing construction has been very low in Sweden compared with other countries (see Charts B10 and B11).* The surplus demand for housing does not correspond to an increase in supply, as new construction of housing is at a very low level. In countries where new construction has been high in relation to GDP, house prices have fallen more than in other countries.
- *The fiscal policy stimulation offered through the temporary tax deduction for building work ("ROT-avdrag") may also have contributed to the increase in house prices.* Lower renovation costs should

**Chart B10. Housing investment in relation to GDP, current prices, seasonally-adjusted data**  
Per cent



Sources: Reuters EcoWin, Statistics Sweden and the Riksbank

**Chart B11. Housing investments in relation to GDP, compared with changes in real house prices**  
Per cent

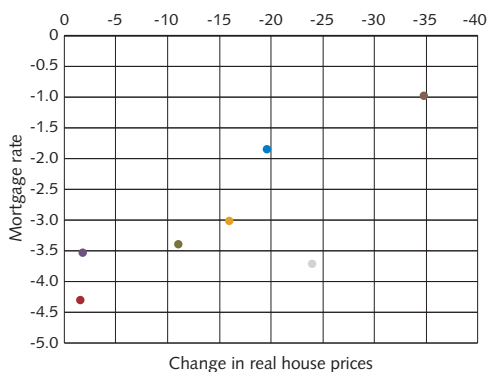


Note. The chart shows the highest housing investments in relation to GDP during the period 2000–2009, compared with the change of real house prices from their peak, until the latest outcome.

Source: Reuters EcoWin

<sup>66</sup> This is also common in Norway, see Norges Bank (2009), Financial Stability Report 1/09 May.

**Chart B12. Change of mortgage rates compared with real house prices**  
Percentages and per cent

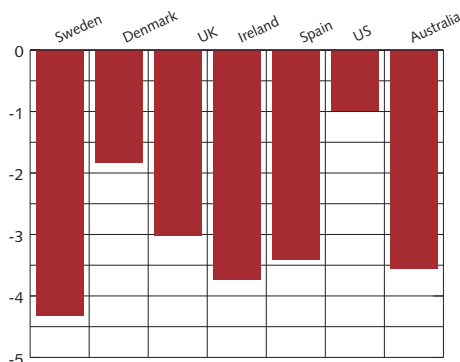


Note. The chart shows the change of mortgage rates during the period 30 September 2008–30 September 2009, compared with real house prices, decline from the peak to the latest outcome. The mortgage rate used is a variable mortgage rate.

Sources: Central Bank Financial Services Authority of Ireland, Reserve Bank of Australia and Reuters EcoWin

Sources: Central Bank & Financial Services Authority of Ireland, Reserve Bank of Australia and Reuters EcoWin

**Chart B13. Interest rate changes as of 30 September 2009, compared with 30 September 2008**  
Percentage points



mean that the price of houses that need renovating increases.

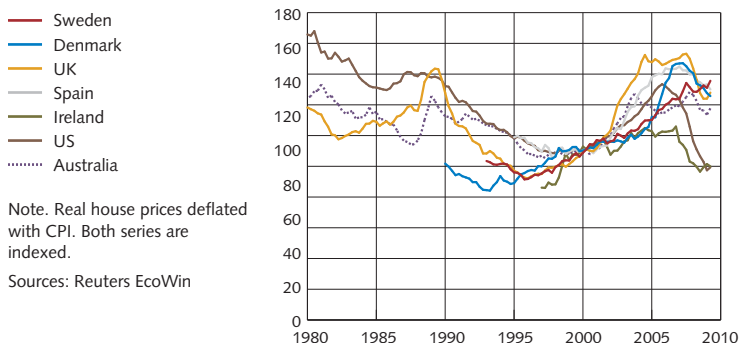
- *Mortgage rates have fallen more in Sweden than in many other countries* (see Charts B12 and B13). The interest rate cuts affect Swedish households directly as a large percentage of households' new loans are at a variable interest rate (see Charts B9 and 2:5).

Moreover, there are essential differences between countries with regard to national housing markets and housing finance markets. In Germany, for example, the absence of a tax deduction for interest expenditure means that households have shorter repayment periods, and that their debt in relation to disposable income is relatively low. US households can, for instance, prepay a fixed-rate loan without incurring any penalty charge and in Denmark it is also possible to renegotiate fixed loans when interest rates fall. If there are no or few penalty charges, there is greater flexibility for households, the transaction costs are lower and household indebtedness increases.

*Are house prices in Sweden justified?*

One way of investigating whether the price increases are reasonable is to look at house prices in relation to incomes, because in the long run prices should rise in line with incomes. As there is a shortage of comparable data on households' disposable incomes, we instead use GDP growth (see Chart B14). In Sweden house prices are rising at a higher rate than GDP, while house prices in other countries are rising at a lower rate than GDP. This relationship indicates that house prices in Sweden have increased more than can be considered sustainable. This can be partly explained by differences in productivity between the housing sector and the rest of the economy.<sup>67</sup>

**Chart B14. Real house prices as a percentage of GDP in fixed prices**  
Index 2000 = 100



Note. Real house prices deflated with CPI. Both series are indexed.

Sources: Reuters EcoWin

67 See Sveriges Riksbank (2009), (2008), "Monetary Policy Report", October and Sellin, P. and Walentin, K. "House prices and the economy", Economic Commentary no. 6 2008.

Studies of models can also provide an indication of whether Swedish house prices are currently overvalued or undervalued. One way is to study how house prices behave in a long-term trend. If one compares house prices with a trend estimated with the aid of a general equilibrium model, then house prices can at present be considered to be slightly above the trend level. The IMF also considers Swedish house prices to be overvalued at present.<sup>68</sup>

Another means is to study how house prices relate to a trend estimated with a Hodrick-Prescott filter. These estimates show that Swedish house prices are currently slightly below the trend. This, together with factors such as rising disposable incomes and a low interest rate, indicates that house prices may continue rising further over the coming year. At the same time, the weak labour market may contribute to dampening house prices.

### *Conclusions*

There are several models which indicate that Swedish house prices are currently overvalued. However, there is no consensus on the size of the gap between market prices and model-based house prices. There are also methods of measuring which indicate that house prices are not overvalued at all, but in fact are slightly undervalued.

The results should therefore be interpreted with caution. The low new construction, rising disposable incomes and the low interest rates may indicate that house prices will continue to rise over the coming year. On the other hand, the

weak labour market and expectations that the interest rate in the long run will return to more normal levels will hold back prices in the housing market. An overall assessment points to house prices probably continuing to rise modestly over the coming period.

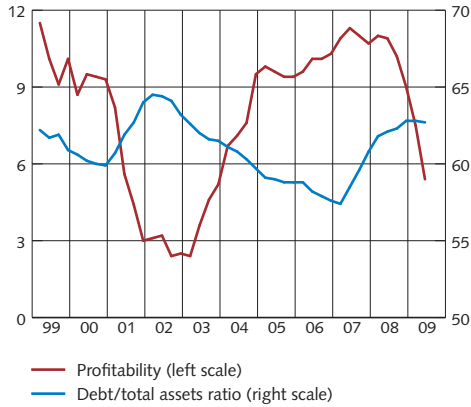
There is also a risk that developments may not be sustainable in the long term, with excessive debts among households and falling house prices. However, this development would not entail any direct threat to financial stability. The Riksbank's stress tests show that households in general can still service their debt, even if interest rates become much higher than they are now. However, higher interest rates would reduce households' scope for consumption, which would ultimately also affect other sectors of the economy and finally the banks.

As buying and financing housing entail long-term commitment, there is reason for borrowers to base their assessments on the interest rates that are expected to prevail in a couple of years' time and which are expected to be much higher than the current low level. Moreover, it is important that the banks ensure that their lending is sustainable in the long term by having sufficient margins in their credit calculations. In this context there may be a reason to review the loan-to-value ratios and amortisation rates.<sup>69</sup> Finansinspektionen (the Swedish financial supervisory authority) has begun a review to check that the banks are taking into account both future interest rates and the risk of unemployment when granting credit. If this is not sufficient to prevent a development that may be unsustainable in the long term, Finansinspektionen can take measures.

<sup>68</sup> See IMF (2009), "World Economic Outlook, October 2009".

<sup>69</sup> Since the financial crisis started, the banks have tightened their loan terms for households, for instance, the loan-to-value ratio has been lowered. See the Federal Reserve's and the ECB's Senior Loan Officer Survey and the Bank of England's Credit Conditions Survey.

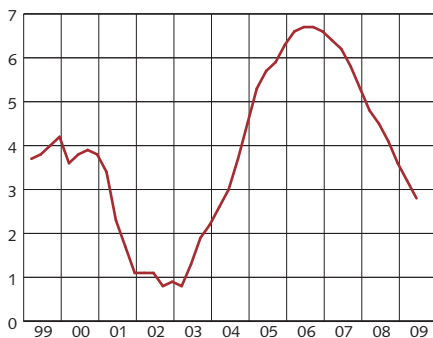
**Chart 2:12: Profitability and debt/total assets ratio in Swedish listed companies**  
Per cent



Note. Profitability is defined as the operating surplus in relation to the total assets.

Sources: Bloomberg and the Riksbank

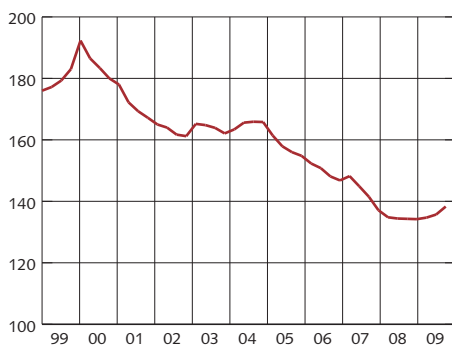
**Chart 2:13: Interest coverage ratio in Swedish listed companies**  
Ratio



Note. The interest coverage ratio is defined as operating profit/loss plus financial income in relation to financial costs.

Sources: Bloomberg and the Riksbank

**Chart 2:14: Current ratio in Swedish listed companies**  
Per cent



Note. The current ratio is defined as current assets in relation to current liabilities. If the current ratio is 100 per cent, this means that current liabilities can be paid immediately, provided that current assets can be immediately converted into cash.

Sources: Bloomberg and the Riksbank

## The Swedish corporate sector

This section analyses corporate sector borrowing from the credit institutions and companies' debt servicing ability. The analysis focuses on some central financial ratios. In addition, there is a forecast of companies' credit quality and credit demand during the period 2009–2011.<sup>70</sup>

**Companies' financial positions have continued to deteriorate.** This is because profitability has fallen substantially (see Chart 2:12), which in turn has meant that the interest coverage ratio has become lower, despite lending rates having fallen by around four percentage points since September 2008 (see Chart 2:13). This means that companies have less capacity to cover their interest costs. However, companies' current ratios have begun to rise again, albeit from relatively low levels (see Chart 2:14). The upturn could be due to companies deliberately building up liquidity reserves in case the access to credit should decline. According to the Riksbank's company interviews, companies are also working on improving their cash flows, which should also increase their liquidity. Companies' indebtedness is falling for the first time since 2006 (see Chart 2:12). At present companies have a manageable debt burden, given the very low interest rates. If profitability continues to fall at the same rate as now, however, a number of companies will experience difficulties in meeting their payments. This is the most obvious macro economic risk in the Swedish corporate sector.

70 The analysis is concentrated on the listed non-financial companies unless otherwise stated.

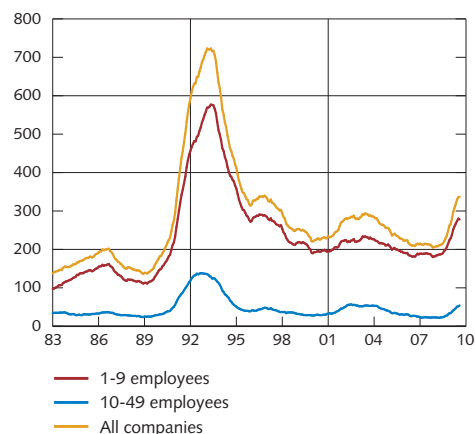
**The number of bankruptcies has begun to fall slightly but is still at a relatively high level.** In some sectors bankruptcies are continuing to rise, but at a slightly lower rate than before. Bankruptcies are increasing most in the manufacturing sector, the hotel and restaurant sector and the transport sector. During the crisis it was mainly bankruptcies among smaller companies that increased, which follows the usual pattern during a recession (see Chart 2:15).

**Companies are still increasing their borrowing but at a slower rate** (see Chart 2:16). The declining borrowing rate is probably due to both lower demand for credit and slightly tougher loan terms at the banks.<sup>71</sup> One sign that the banks are setting tougher conditions for new loans to companies is that borrowing from credit institutions is falling, while securities funding is still increasing. In historical terms, borrowing from credit institutions has had some correlation to developments in real fixed gross investment (see Chart 2:17). This is because companies usually finance part of their investments with loans. At the start of the financial crisis, however, the correlation between borrowing and gross investment looked slightly different. The rate of increase in fixed gross investment had slowed down considerably, despite the fact that companies' borrowing continued to increase strongly. Part of this could be explained by companies making use of credit lines or bank overdrafts to build up liquidity reserves. Now, however, the historical correlation between investment and borrowing appears to be starting to apply again as the situation in the financial markets improves. Since the previous Report the Riksbank has adjusted its investment forecast downwards, and as a result also reduced the forecast for borrowing. Falling investment is expected to lead to companies reducing their borrowing in 2009 and 2010. Once economic activity begins to improve again in 2011 the credit volume is expected to begin to grow again.

**Companies are primarily using credit institutions for their borrowing, but funding through commercial paper and bonds is increasing.**

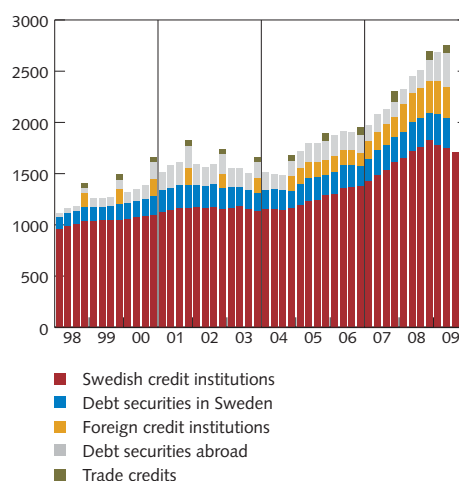
Swedish and foreign credit institutions account for around 75 per cent of the Swedish companies' total borrowing (see Chart 2:16). Apart from these sources, the larger companies in particular use funding from Swedish and foreign debt securities. During 2009 issues of commercial paper and bonds abroad have increased substantially and now exceed the value of issues in Sweden. The non-financial companies' share of the Swedish bond market has fallen since the beginning of the crisis. According to contacts with some of the companies, one explanation appears to be an increased willingness to diversify funding by issuing on more markets than before. Moreover,

**Chart 2:15. The number of company bankruptcies broken down by company size**  
Twelve-month moving average



Sources: Statistics Sweden and the Riksbank

**Chart 2:16. Corporate borrowing from credit institutions and their securities funding**  
SEK billion

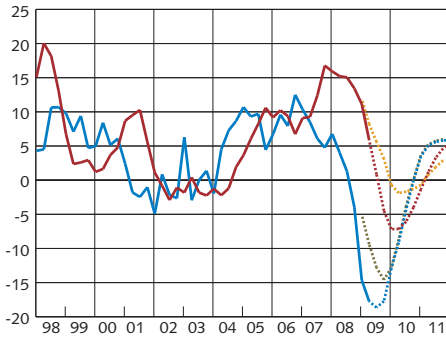


Note. Trade credits are reported on an annual basis, with the exception of Q2 2009, where total trade credits at the end of Q2 are presented.

Source: The Riksbank

<sup>71</sup> In the National Institute of Economic Research's Economic Tendency Survey for October one third of the companies stated that funding is more difficult than normal. The construction industry stated that funding was more difficult than normal, 42 per cent of the construction companies stated that funding was more difficult than normal.

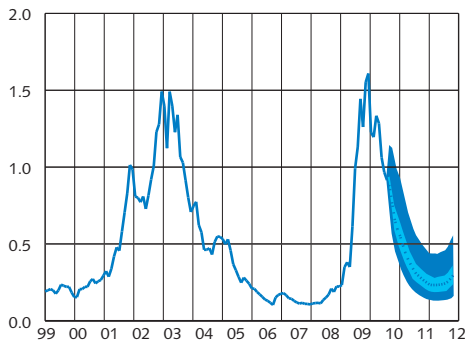
**Chart 2:17. Corporate borrowing from credit institutions and fixed gross investment**  
Annual percentage change



— Corporate borrowing from credit institutions  
 ..... Forecast borrowing, FSR 2009:2  
 ..... Forecast borrowing, FSR 2009:1  
 — Gross fixed capital formation  
 ..... Forecast investments, MPR October  
 ..... Forecast investments, FSR 2009:1

Sources: Statistics Sweden and the Riksbank

**Chart 2:18. Corporate credit risk, outcome and forecast according to the Riksbank's main scenario**  
Per cent



Note. The uncertainty intervals are the intervals within which the average expected default frequency (EDF) is judged to lie, with probabilities of 50 and 95 per cent respectively, given the Riksbank's main scenario in the Monetary Policy Report of October 2009. The intervals thus reflect the uncertainty over the manner in which the EDF is affected by changes in industrial production, inflation and the three-month risk-free rate. The interval does not take into account the uncertainty in the macroeconomic variables.

Sources: Moody's KMV and the Riksbank

companies appear to be funding themselves in the securities market to a slightly greater extent. This is a positive development in the sense that the securities market has begun to function better now than during the most acute crisis. However, lending from credit institutions fell during the second quarter of the year. This could also mean that smaller companies, which do not have access to the securities market, are finding it more difficult to fund their operations as a result of tougher credit terms. The overall assessment, however, is that at present there is no credit crunch in Sweden.

**Companies' credit risk in the banks' loan portfolios is expected to decline as the recovery takes place** (see Chart 2:18). Since

the previous forecast, two factors in particular have affected developments in companies' credit risks. One is that the Riksbank has cut the repo rate, and the other is that the financial markets are functioning better. This makes it easier for companies to pay their loans at the same time as the market now values the equity in the company much higher. Moreover, the Riksbank has raised the forecast for GDP growth for the years 2010 and 2011 since the previous Report. The current forecast of companies' credit risk therefore contains a clear recovery scenario. However, there is still considerable uncertainty and a marked risk that credit quality will decline during the forecast period. This applies in particular to sectors such as transport, IT and wholesale and retail trade. Companies' credit risk is expected to rise slightly during the second half of 2011, which is because the recovery is not enough to compensate for the expected increase in lending rates with effect from the end of 2010.

**To summarise, the credit risk in the banks' lending to the corporate sector remains high, but is expected to fall over the coming two years.**

The driving forces behind this are low interest rates and a general economic recovery. Companies' borrowing from credit institutions is expected to fall in 2009 and the greater part of 2010, and then to begin to increase again. The main reason for the decline in borrowing in 2010 is that companies do not need to invest as much as before. Moreover, companies appear to be funding themselves in the securities market to a greater extent than before, with the main increase being in issues abroad. Although lending from credit institutions is currently falling, the Riksbank's assessment is that there is no credit crunch at present in Sweden.

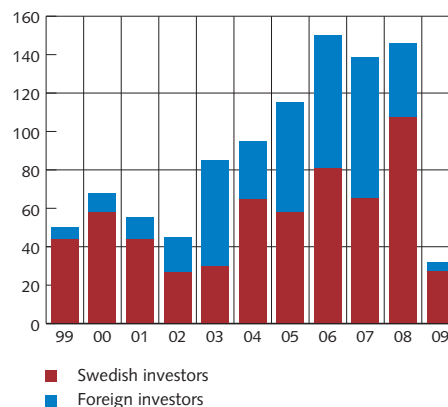
## The commercial property market and property companies

This section analyses the financial position of the property companies, their borrowing and their debt-servicing ability. The fact that property companies, which are part of the non-financial company sector, are analysed separately, is because they are the largest individual industry to which the major Swedish banks lend money. The debt-servicing ability of the property companies and the value of the property, that is, the value of the banks' collateral for lending to property companies, are largely determined in the commercial property market. The section therefore begins with developments and risks in this market.

### THE COMMERCIAL PROPERTY MARKET

**Activity has been low in the both the international and Swedish commercial property markets in 2009.** Internationally, total sales volumes have more than halved.<sup>72</sup> During the first three quarters of the year the total transaction volume in the Swedish commercial property market amounted to around SEK 30 billion, which is the lowest level in ten years (see Chart 2:19). During the period both Swedish and foreign investors have continued to withdraw from the Swedish commercial property market. However, this applies primarily to foreign investors, who only represented 15 per cent of the total transaction volume in the market during the first three quarters of the year, which can be compared with 26 per cent in 2008.<sup>73</sup>

Chart 2:19. Transaction volumes in the Swedish commercial property market  
SEK billion



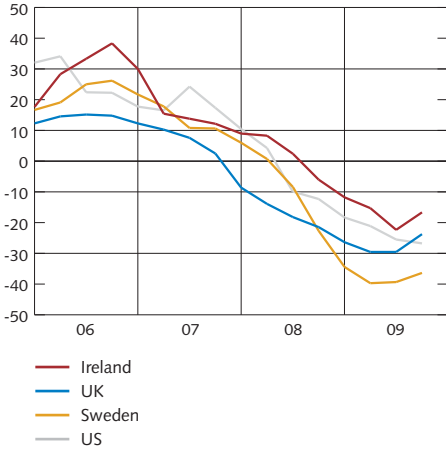
Note. The data for 2009 refer to the volume of transactions taking place during the period January–September 2009, multiplied by a factor of 1+1/3. The data does not include sales to tenant-owner associations.

Sources: Savills and the Riksbank

72 See the IMF (2009), "World Economic Outlook", October.

73 See Savills (2009), "Fastighetsmarknaden kvartal 3 – Nya köpmönster på den svenska fastighetsmarknaden" (The property market Q3 – new purchasing patterns in the Swedish property market), September.

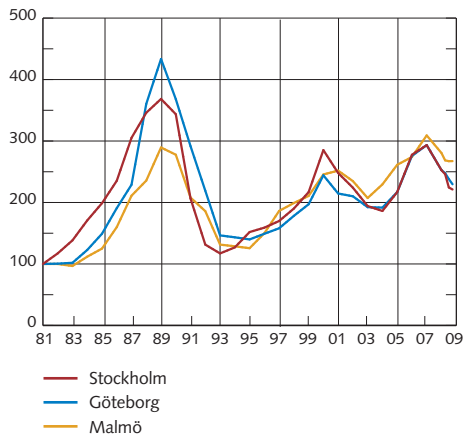
**Chart 2:20. Prices for office premises in Sweden and abroad**  
Annual percentage change



Note. Price data for Sweden refer to modern office premises in the centre of Stockholm. Price data for the United Kingdom refer to prices for all types of commercial properties, i.e. not just office premises.

Sources: Investment Property Databank (IPD), Reuters EcoWin, MIT Center for Real Estate, Newsec and the Riksbank

**Chart 2:21. Real prices of office premises in city centres**  
Index 1981 = 100



Note. Prices have been deflated by the CPI.

Sources: Newsec and the Riksbank

**The low level of activity has largely been explained by the difficulties investors have experienced in finding funding.** This applies to investors in both the international and Swedish commercial property markets. In cases where investments have been made in the Swedish market, this has been almost exclusively by investors with a high percentage of shareholders' equity.<sup>74</sup> The Swedish property companies largely fund their investments through bank loans from Swedish and foreign banks, which have been unwilling to grant loans for new investments during the financial crisis.<sup>75, 76</sup> This is connected to the banks in uncertain times generally preferring to reduce their risk-weighted assets, for instance, by lending to households to a greater extent than companies. This applies in particular to property companies, which have historically caused the banks major losses. The property companies in the international property market are more dependent on market funding than the Swedish property companies. This is partly in the form of issuing their own securities and partly through bank loans where the banks in turn issue commercial mortgage-backed securities (CMBS). As the commercial property market is internationally assessed as generating further loan losses, the demand for CMBS remains low. This has contributed to reducing the banks' capacity and willingness to lend to international commercial property companies.<sup>77</sup>

**The low level of activity has meant that the market value of the premises is uncertain.** Prices have continued to fall in Sweden and abroad, although the price fall has slowed down somewhat during the past quarter (see Chart 2:20). In countries where prices have fallen substantially, such as the United Kingdom and Ireland, the commercial property markets may begin to appear attractive to investors again. Compared with the highest price levels in 2007, real prices for offices in city locations in Sweden have fallen by 25 per cent in Stockholm, by 22 per cent in Göteborg and 14 per cent in Malmö (see Chart 2:21).

<sup>74</sup> See, for instance, Newsec (2009), "Property Report Autumn 2009", September.

<sup>75</sup> By "Swedish property companies" we mean here, unless otherwise stated, the Swedish property companies that are listed on NASDAQ OMX Stockholm. See the Riksbank (2009), "Financial Stability Report 2009:1", June, and Finansinspektionen (2009), "Bankernas utlåning till kommersiella fastigheter" (the banks' lending for commercial property), May, with regard to foreign banks lending in the Swedish commercial property market.

<sup>76</sup> See Fastighetsägarna Stockholm (2009), "Fastighetsägarbarometern - oktober" (property owners' survey), October.

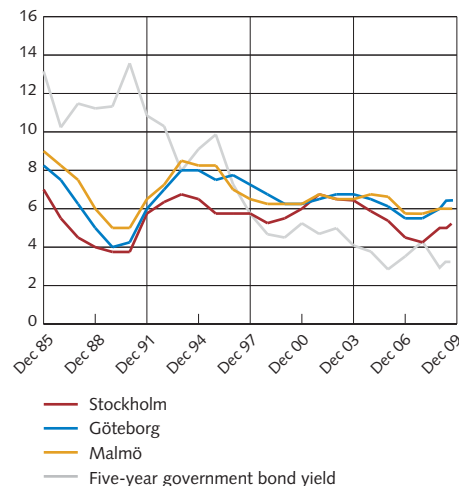
<sup>77</sup> See the IMF (2009), "Global Financial Stability Report", October; ECB (2009), "Financial Stability Review", June, and Finansinspektionen (2009), "Risker i det finansiella systemet", November.



**In Sweden the continuing price falls are mainly due to the continued weakening in the rental market.** When prices rose substantially during the period 2005-2007 and then began to fall, this was instead largely due to investors' yield requirement declining and increasing during the same periods (see Chart 2:22).<sup>78</sup> Over the past quarter, on the other hand, investors' yield requirements have remained almost unchanged, while rents have fallen ever more sharply, particularly in Stockholm, and thus followed price developments (see Chart 2:23).

**At the same time as rents have continued to fall, the percentage of vacant premises, the vacancy rate, has increased slightly in some city locations** (see Chart 2:24). This applies to Stockholm and Göteborg city locations, while the vacancy rate has declined slightly in Malmö city. The increase in vacancy rates is a consequence of a recession that means that the tenants in the sectors that use the most office space either do not need, or cannot, rent such large spaces when the demand for their own products and services declines. Despite the fact that prospects have brightened somewhat with regard to production in the Swedish economy as a whole, employment is expected to carry on falling for some time to come. This also includes the service-producing sectors (see Chart 2:25). As these are the parts of the business sector which account for the largest share of demand for office space, demand for office premises is therefore expected to continue to fall in the future. In addition, newly-produced premises will come onto the market, some of which do not have any rental agreements signed. This increased supply, together with a decline in demand, means that vacancies will probably increase further in the future.<sup>79</sup> Given the falling rents and increasing vacancies, construction investment in new projects has declined in 2009 and will probably be moderate next year, too.<sup>80</sup>

**Chart 2:22. Average yield levels for modern office premises in city centres**  
Per cent



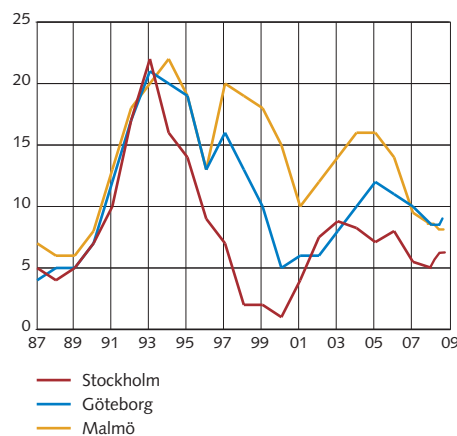
Sources: Newsec and Reuters EcoWin

**Chart 2:23. Real prices and rents of office premises in Stockholm city centre**  
Annual percentage change



Note. Prices and rents have been deflated by the CPI.  
Sources: Newsec and the Riksbank

**Chart 2:24. Vacancy rate for office premises in city centres**  
Per cent



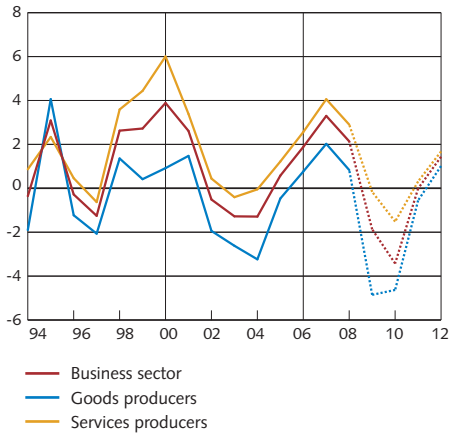
Source: Newsec

78 The price an investor is prepared to pay for an office corresponds to the ratio for the expected net operating income for the premises and the size of the investor's yield requirement. This is, the higher the expected net operating income is and the lower the direct yield requirement the investor has, the higher the price the investor is prepared to pay. This can be expressed on the basis of a simplification of Gordon's formula:  $MV_0 = \frac{NOI_1}{r-g}$  where  $MV_0$  is the market value at the time 0;  $NOI_1$  is the net operating income during the first year and which changes over time with interest on interest at a rate of  $g$  per cent;  $r$  is the investor's total yield requirement;  $r-g$  thus corresponds to the yield requirement, that is, the difference between the total yield requirement and the yield the investor receives in the form of an increase in value (see Lind, H. and Lundström, S. (2009, p. 73), "Kommersiella fastigheter i samhällsbyggandet").

79 See Jones Lang LaSalle (2009), "Nordic City Report Autumn 2009", September.

80 See the Swedish Construction Federation, "Byggnationens utveckling" (survey of economic activity in the construction industry), no. 3, October.

Chart 2:25. Number of employed in the business sector  
Annual percentage change



Note. The broken lines represent the Riksbank's forecast.

Sources: Statistics Sweden and the Riksbank

## THE PROPERTY COMPANIES

**The poorer situation in the commercial property market is reflected in a continued deterioration in the financial position of the property companies in Sweden.** Although the number of bankruptcies among property companies has risen relatively little compared with other industries, there has nevertheless been an increase.<sup>81</sup> However, bankruptcies are increasing at a slower rate now than in June, when the previous Financial Stability Report was published. Although none of the listed property companies has gone bankrupt, the debt/equity ratio and loan-to-value ratio have increased and solvency has fallen in most of these companies.<sup>82</sup> The fact that these key figures have deteriorated is partly due to an increase in the companies' interest-bearing liabilities and partly due to a decline in the value of their equity. In addition the market value of the properties has fallen (see Chart 2:21).<sup>83</sup>

**The property companies' debt-servicing ability is still fairly good, but will deteriorate somewhat in the future.** The previously good rental market has meant that rental income has increased for almost all of the property companies, and thus their net operating income has increased.<sup>84</sup> At the same time, interest expenditure has fallen for most of the property companies, as a result of the Riksbank's large cuts in the repo rate. This has meant that the interest coverage ratio and thus the property companies' debt-servicing ability in general has improved during the report period. Further ahead, the reduced demand for offices in the rental market is expected to contribute to lower income for the property companies and thus to a slight deterioration in their debt-servicing ability.

81 This refers to all property companies, that is, also non-listed property companies. The number of bankruptcies among property companies with at least one employee amounted during the twelve-month period November 2008 to October 2009 to 63, which can be compared with 56 during the twelve-month period November 2007 to October 2008, that is, an increase of almost 13 per cent.

82 Refers to the 14 out of a total of 17 property companies that are listed on NASDAQ OMX Stockholm and which had published their interim reports for the period January–September 2009 at the time the Financial Stability Report was produced. The report period covers January–September 2009. Unless otherwise stated, comparisons are made with the corresponding period in the previous year.

83 Chart 2:21 illustrates developments in prices of offices in city locations in Sweden. The listed property companies also own other types of property than offices, such as retail, industrial and residential premises. See Financial Stability Report 2009:1 for an illustration of price developments for these types of commercial property up to the whole year 2008. Moreover, some of the Swedish listed property companies also own property abroad.

84 On average, the rental contracts the property companies sign with their tenants are for 3-5 years. This means that property companies are not affected by changes in market rates until the rent contracts expire and need to be renegotiated, possibly at lower levels.

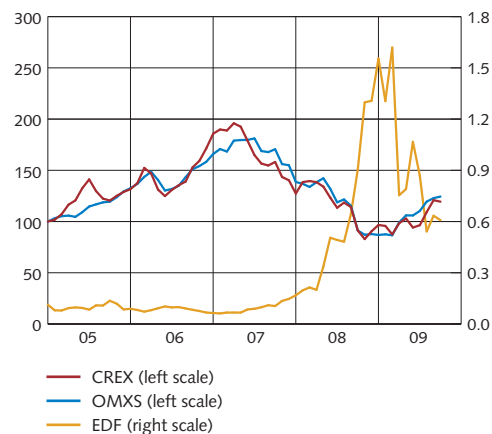
**Credit risk remains high in the banks' lending to the property companies.** The expected default frequency for the property companies has fallen recently, but remains high in an historical perspective. The price of shares in property companies has increased slightly during the same period, approximately in line with the stock market in general (see Chart 2:26). However, the fact that the property companies' debt-servicing ability is declining means that the credit risk in the banks' lending to commercial property companies is still high. The fact that the value of the premises risks falling when expectations of future income are adjusted downwards will also contribute to this.

**It is still difficult for the property companies to obtain funding.**

At the same time, a large share of loans among the listed property companies will need to be refinanced over the coming years. While the property companies state that it is more difficult than normal to obtain bank loans for investment, the question is to what extent the major Swedish banks will refinance the loans of the Swedish property companies that successively mature. Moreover, there is great uncertainty over whether the foreign banks will withdraw from the Swedish market, and whether the major Swedish banks would in that case take over their outstanding loans.<sup>85</sup>

**All in all, the credit risk in the banks' lending to the property companies is expected to remain high for some time to come.** This is due to poorer earnings capacity for the property companies and to the continued heavy falls in property values that have a negative effect on the property companies' equity. However, credit risk in the property companies is expected to decline as the economic recovery proceeds, as in the corporate sector as a whole (see Chart 2:18). This is explained by the fact that the property companies' own equity will be positively affected by improved demand in the rental market, which in turn is a stage in the generally-improved demand situation in the economy. Credit risk in general is expected to be slightly lower than was assumed in the previous Financial Stability Report as a result of the economic outlook appearing slightly more positive.

**Chart 2:26. Expected default frequency (EDF) and share prices for property companies Index, January 2005 = 100 and per cent**



Note. CREX refers to the Carnegie Real Estate Index which consists of property companies listed on the NASDAQ OMX Stockholm A and O lists. OMXS is equivalent to OMX Stockholm.

Sources: Moody's KMV Credit Edge, Reuters EcoWin and the Riksbank

<sup>85</sup> According to Grant Thornton (2009), "Fastighetsbolagen räknar med fortsatta stålbad" (Property companies expecting difficult times to continue), press release, September, lending from foreign banks may account for around SEK 200 billion. If the major Swedish banks were to take over these loans, it would mean that their lending to property companies in Sweden would increase by almost 30 per cent.

## The Swedish banks' borrowers abroad

With half of their lending outside of Sweden, the Swedish banks' activities abroad are as important as their domestic activities. The other Nordic countries are the largest market outside of Sweden, followed by Germany, the Baltic countries, and to a lesser extent Ukraine and Russia. The lending is relatively evenly distributed between foreign and Swedish households, while foreign companies constitute a slightly larger percentage than Swedish ones. The Swedish banks constitute an important part of the banking system in the Baltic countries. This means that developments in these countries are important to the Swedish financial system. The Swedish banks' lending to Ukraine and Russia is relatively small. However, given the very poor economic developments, particularly in Ukraine, the probability of continued loan losses in the banks' lending there is still substantial.

### OTHER NORDIC COUNTRIES AND GERMANY

**The recession has bottomed out in the Nordic countries and Germany.** GDP growth is expected to be slightly positive in all of these countries in 2010. Exports are important for both the Nordic and the German economies and a continued recovery is therefore dependent on global developments. GDP growth is expected to be the highest in Norway, which is the country least affected by the economic downturn (see Table 2:1). Finland and Denmark are expected to have the lowest growth. In Finland's case this is because exports are dominated by capital goods, where demand recovers more slowly than in other industries.<sup>86</sup> Denmark's exports are less cyclically-sensitive. The weak growth can instead be assumed to stem from the re-adjustment of the previously overheated construction and property sectors. In Finland and Denmark industrial production continued to decline during the third quarter of 2009, but at a lower rate than before. In Norway and Germany industrial production increased, but from low levels. The confidence indicators for manufacturing rose in all of the countries, but also from low levels.<sup>87</sup> As in Sweden, unemployment is expected to increase over the coming years (see Table 2:2). In Germany the possibility for companies to reduce working hours for their employees has contributed to slowing down the rise in unemployment.

86 See Finlands Bank (2009), "Economic Outlook, Special Issue 2, 2009", September.

87 See IFO (2009), "Business Climate Germany", October, and national statistics offices.

**Table 2:1. Expected GDP**  
Annual percentage change

	2009	2010
Germany	-4.9	1.5
Denmark	-4.4	0.7
Norway	-1.1	2.4
Finland	-6.5	0.7

Source: Consensus Forecast Inc. (2009), "Consensus forecast", November

**Table 2:2. Expected unemployment**  
Per cent

	2009	2010
Germany	8.2	9.5
Denmark	3.6	5.7
Norway	3.3	3.8
Finland	8.6	10.5

Sources: Consensus Forecast Inc. (2009), "Consensus forecast", November, and national central banks

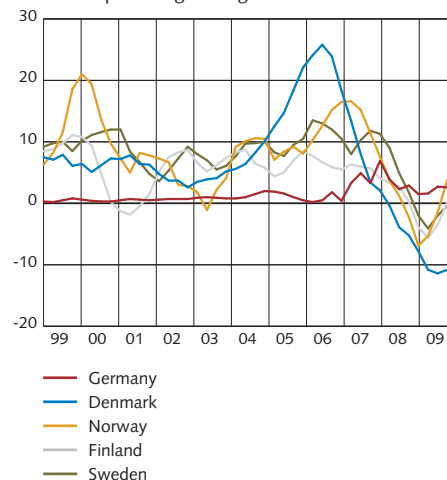
**The fall in house prices has come to a halt in the Nordic countries**

(see Chart 2:27).<sup>88</sup> In Denmark the fall in prices is expected to continue in 2010, but at a slower rate than before.<sup>89</sup> One explanation for Danish house prices continuing to fall is that they rose much more than in the other Nordic countries during the economic boom. In Germany, house prices have shown a stable development, despite the economic downturn. House prices are rising again in Norway, but at the same time the Norwegian central bank is warning that house prices are too high.<sup>90</sup>

**Nordic corporate borrowing is expected to become positive again, while households' borrowing is expected to increase at a faster rate in the coming period.** Corporate credit growth has continued to decline since the previous Report and is now very low or negative (see Chart 2:28). According to the Riksbank's forecasts, companies will begin to increase their borrowing in 2010, as economies recover. In Germany it is expected to take slightly longer before borrowing begins to rise. The rate of household credit growth is increasing again, after a temporary slump (see Chart 2:29). In Denmark household credit growth is temporarily negative, but it is expected to be positive again at the beginning of 2010. According to the Riksbank's forecasts, the rate of borrowing among households is expected to increase further over the coming year, despite the expected rise in unemployment. One explanation for this is the low interest rates.

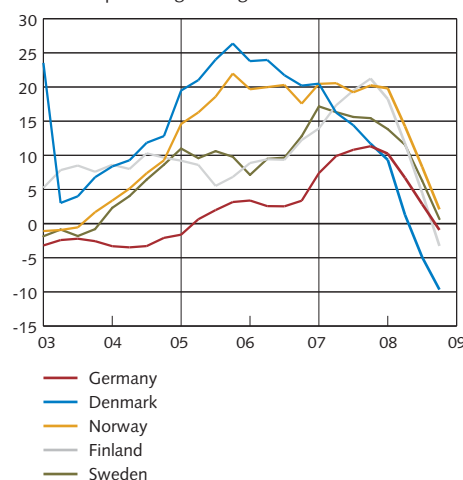
**Households' debt-servicing ability is expected to deteriorate in the coming period.** Households' economic situation will deteriorate as a result of unemployment continuing to rise. At the same time, interest rates are expected to rise as economic activity improves, which will reduce households' margins. However, households' disposable incomes will increase, primarily due to fiscal policy stimulation, which

**Chart 2:27. House prices**  
Annual percentage change



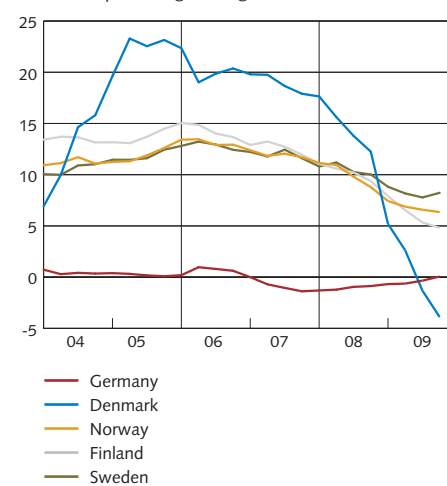
Sources: Reuters EcoWin and the BIS

**Chart 2:28. Companies' borrowings**  
Annual percentage change



Sources: ECB and national statistics offices

**Chart 2:29. Households' borrowings**  
Annual percentage change



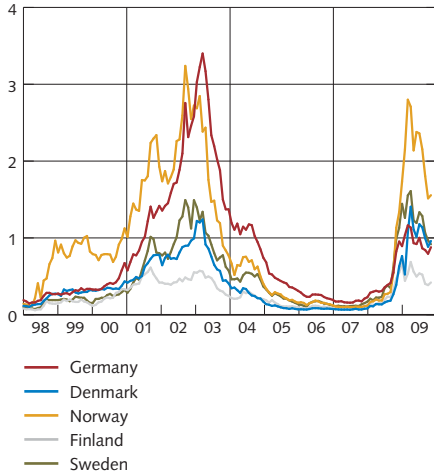
Sources: ECB and national statistics offices

<sup>88</sup> For a more detailed review of house prices, see the box "Developments in house prices and mortgage markets in Sweden and abroad".

<sup>89</sup> See Danmarks Nationalbank (2009), "Monetary Review - 3rd Quarter 2009", September.

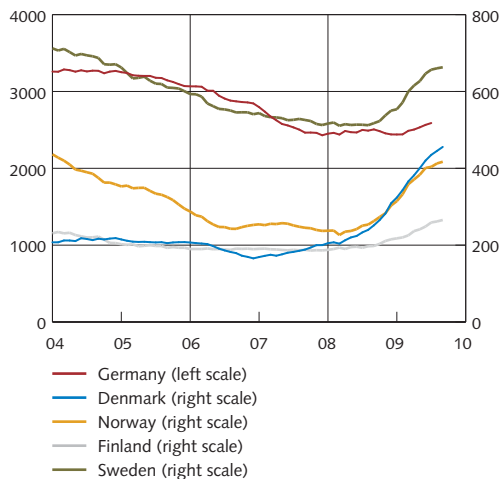
<sup>90</sup> See Norges Bank (2009), "Experiences with the financial crisis", September.

**Chart 2:30. Expected default frequency for listed non-financial companies**  
Per cent



Sources: Moody's KVM Credit Edge and the Riksbank

**Chart 2:31. Corporate defaults**  
Twelve month moving average



Note. Germany lacks data for September 2009

Sources: National statistics offices

to some extent will counteract the deterioration. The way that debt-servicing ability is affected differs between countries. Finland and Germany, like Sweden, are affected by high unemployment. However, the debt ratio is lower in Finland and Germany than in Sweden, around 100 per cent of disposable income. As Finland and Denmark are expected to experience a slow recovery, households there are cautious. They are reducing their consumption and increasing their saving.<sup>91</sup> In Denmark household debt amounts to 275 per cent of disposable income, which means that future interest rate raises are expected to lead to a decline in Danish households' margins. Despite the fact that unemployment in Denmark will be relatively low, the percentage increase in the number of unemployed will be greater than in Sweden. In Norway the expected rapid economic recovery means that unemployment is expected to remain at a low level. The rapid recovery caused Norges Bank to raise its policy rate in October.

#### **Loan losses from households are nevertheless expected to be limited.**

This is because households, despite poorer debt-servicing ability, are expected to manage to pay their interest expenditures. It is also due to the value of what the banks receive in return when a household goes bankrupt (the degree of recovery) remaining high. In Denmark the degree of recovery is probably negatively affected by falling house prices, as households' largest asset is their home.<sup>92</sup> All in all, the Nordic and German households are not expected to cause the banks any major loan losses. However, poorer debt-servicing ability means that households may need to cut back on other consumption, which may affect other sectors of the economy, for instance the corporate sector.

**Companies' default risk has declined recently, but is still high** (see Chart 2:30). The economic downturn has meant that profits in the Nordic and German companies have declined. At the same time, the economic downturn has dampened companies' willingness to invest and thus their demand for loans.<sup>93</sup> Moreover, the poorer prospects for companies have made the banks less willing to lend to companies. In Denmark bankruptcies increased by 83 per cent during the second quarter of 2009, compared with the second quarter of 2008 (see Chart 2:31). In Finland, Norway and Germany the corresponding figures were 46, 58 and 12 per cent respectively.<sup>94</sup> According to the Riksbank's forecast, the default risk should decline over the coming year, but will increase initially in Denmark.

#### **The Swedish banks have particularly large exposures to the property and transport sectors, where loan losses are expected to increase.**

Swedish banks have lent approximately SEK 285 billion for commercial property in the other Nordic countries and Germany. In the property

91 See Finlands Bank (2009), "Economic Outlook, Special Issue 2, 2009", September.

92 See Danmarks Nationalbank (2009), "Monetary Review – 2nd Quarter 2009", June.

93 See the ECB (2009), "Monthly Bulletin", August and the OECD (2009), "OECD Economic Outlook", June.

94 See national statistics offices.

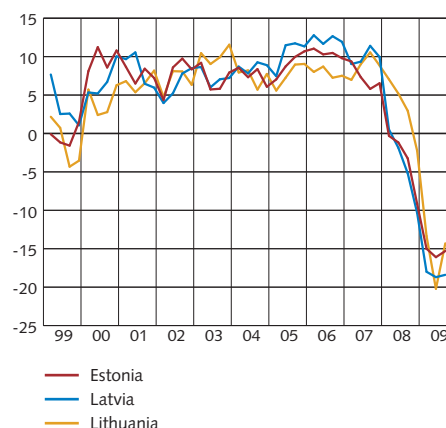
sector, vacancies are expected to increase at the same time as rents are expected to be lower, which indicates poorer earnings for the property companies in the future and lower property values.<sup>95</sup> In the transport sector the risk of default has increased over the year, particularly as shipping companies have been hit hard by the economic crisis. Shipping companies comprise a large part of the transport sector, especially in Norway. Swedish banks have lent a total of approximately SEK 160 billion to shipping companies. The default risk is also higher in the construction sector than for the average company. However, government investment has boosted activity in the construction sector and thus probably reduced the default risk. In Denmark, increased loan losses are expected in the agricultural sector, as a result of falling prices for agricultural land after several years of strong price rises, at the same time as the Danish agricultural sector has increased its degree of borrowing.<sup>96</sup>

**To summarise, there is still a high credit risk in the banks' lending to the companies in other Nordic countries and Germany, although it has declined slightly since the previous Financial Stability Report was published.** This applies in particular to companies in the property and transport sectors, which still entail a high risk exposure for the Swedish banks. The debt-servicing ability of households is expected to deteriorate slightly in the coming period, but loan losses from households are still expected to be limited. As interest rates rise, however, households may need to cut back on other consumption, which may have a negative effect on other sectors of the economy.

#### THE BALTIC COUNTRIES

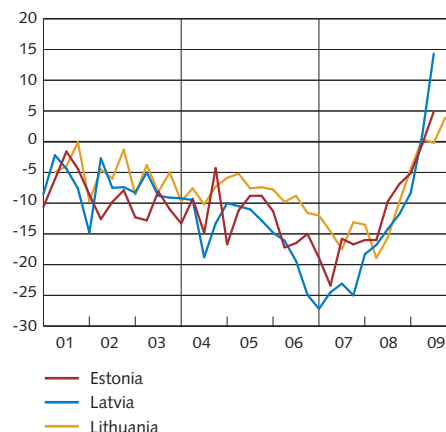
**In the Baltic countries the downturn in the economies slowed down during the third quarter of the year** (see Chart 2:32). Developments have led to a surplus on the current account, particularly as a result of imports falling more than exports (see Chart 2:33). Moreover, foreign companies have made losses on their investments in the Baltic countries, which means that the outflow of capital declines.<sup>97</sup> Although the downturn in the economies has slowed down, households' optimism regarding the future remains at low levels in Latvia and Lithuania. In Estonia, however, optimism has recently increased (see Chart 2:35). Nevertheless, GDP is expected to fall substantially this year. It is also expected that the economies will shrink next year.<sup>98</sup>

**Chart 2:32. GDP**  
Annual percentage change



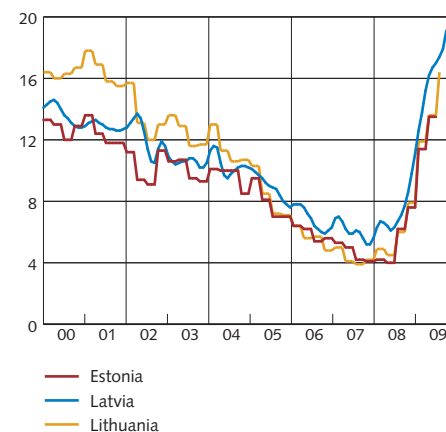
Source: Reuters EcoWin

**Chart 2:33. Current account**  
Percentage of GDP



Source: Reuters EcoWin

**Chart 2:34. Unemployment**  
Per cent



Source: Eurostat

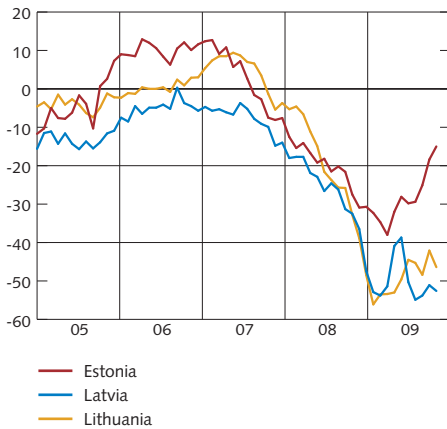
<sup>95</sup> See Newsec, "Property Report, Autumn 2009", September and Danmarks Nationalbank (2009), "Monetary Review – 3rd Quarter 2009", September.

<sup>96</sup> See Danmarks Nationalbank (2009), "Financial stability – 1st half 2009", June.

<sup>97</sup> The current account consists of the balance of trade in goods and services, factor incomes and transfers. Foreign companies' losses have a positive effect on the current account, as the outflow of capital declines.

<sup>98</sup> This year, GDP is expected to fall by almost 13.7 per cent in Estonia, around 18 per cent in Latvia and 18 per cent in Lithuania. In 2010, GDP is expected to fall by 0.1 per cent in Estonia, 4 per cent in Latvia and almost 4 per cent in Lithuania. See the "European Economic Forecast", Autumn 2009, European Commission.

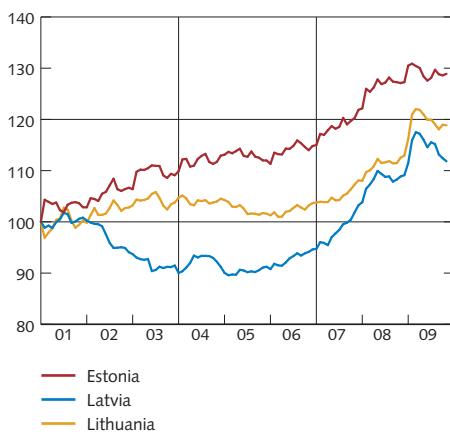
**Chart 2:35. Consumer confidence indicator**  
Net figures, per cent



Note. The confidence indicator is a weighing together of the responses to various questions about the respondent's own financial situation and the general state of the economy in the next twelve months. The net figures are defined as the proportion of respondents who reply positively less the proportion of respondents who reply negatively.

Source: European Commission

**Chart 2:36. Real exchange rates for the Baltic countries**  
Index 2000 = 100



Note. The exchange rate is corrected for the price level (CPI). The scale is inverted so that lower values indicate weaker exchange rates.

Source: The Bank for International Settlements

**The Baltic countries' competitiveness has begun to improve as a result of internal devaluations and of the real effective exchange rates depreciating** (see Chart 2:36). This applies in particular to Latvia and Lithuania. Nominal wages are falling, but the level is still high as wages increased dramatically for many years (see Chart 2:37). Real wages are also falling in all three countries. The inflation rate has continued to fall rapidly, and in Estonia and Latvia prices are falling in relation to the same period last year (see Chart 2:38). However, prices are falling on a monthly basis in all of the countries. However, the fact that competitiveness has strengthened has not improved exports, which have continued to weaken. Meanwhile, exports have also fallen in countries where the real effective exchange rates have depreciated more, which shows that global demand is still very weak.

**It will take a long time for the Baltic countries to recover.** Further tax increases and cuts in expenditure may be needed if the countries are to be able to stabilise public finances.<sup>99</sup> There is a risk in the short term that this will dampen domestic demand even more. At the same time, the recovery abroad is still weak, which continues to hold back demand for the countries' exports. However, the demand for the exports from the Baltic countries should increase again as global demand returns. But this presupposes that these countries manage to further squeeze wages and other prices. When global demand does eventually return, Estonia will have an advantage over the other two countries in that a large part of Estonia's exports go to the Nordic countries. Latvia and Lithuania, on the other hand, are more dependent on each other and on other eastern and central-European countries where the recession is deeper than in the Nordic countries. At the same time, Estonia's exports may contain imports from Latvia and Lithuania. As the conditions for exports improve at the same time as imports are held back by weak domestic demand, this indicates that the current account will continue to strengthen in these countries. At the same time, it is expected that foreign investors will continue to make losses on their investments, which will also add to the surplus.

**There is a substantial need for external funding to fund the deficits in the government budgets.** This applies in particular in Latvia and Lithuania. However, the difficulties to acquire funding is large as the credit ratings of the Baltic countries have continued to be downgraded at the same time as investors have gradually reduced their exposures to Eastern and Central Europe in general. Recently, investors' confidence has begun to return, which was reflected in the substantial interest when the Lithuanian government issued a five-year dollar bond in the autumn. However, Latvia is completely dependent on funding through the international support package. The need for external funding is

<sup>99</sup> This year, the budget deficits are expected to reach three per cent of GDP in Estonia, over nine per cent in Latvia and ten per cent in Lithuania. See the "European Economic Forecast, Autumn 2009", European Commission.



smaller in Estonia than in the other countries, as it has saved earlier budget surpluses in funds that can be used to cover the deficits.<sup>100</sup>

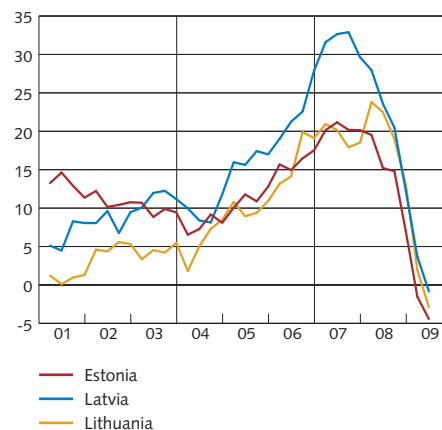
**Household and corporate borrowing is falling in all three of the countries** (see Charts 2:39 and 2:40). This is due to the weak demand for credit at the same time as the banks have become more restrictive in their lending in line with the weak development of the economy. The foreign parent banks have, however, largely continued to provide their subsidiary banks with credit in order to maintain lending to creditworthy households and companies.<sup>101</sup> The fact that borrowing is declining indicates that households and companies have now begun to make net amortisation, and also that the banks have made provisions for loan losses in the Baltic countries (see Chapter 3). This development is expected to continue as the demand for loans is low and the lenders will in all likelihood continue to be restrictive in providing credit due to the poorer credit quality of the borrowers. The banks are also expected to continue making provisions for probable loan losses over the next few years. A large proportion of all the loans have been taken in foreign currency, primarily euro. In Estonia and Latvia, approximately 80 and 90 per cent of the loans respectively are in foreign currency. In Lithuania the percentage is less. At the same time, the borrowers' incomes are largely in local currencies. Despite the fact that borrowing is declining, the debt ratio of the households and companies has continued to increase as a result of the fall in nominal GDP (see Chart 2:41). This also indicates that the recovery in domestic demand make take some time as a high level of indebtedness restricts both consumption and investment.

**Households' and companies' debt-servicing ability has weakened further and there is a risk that this trend will continue.** This can be noted not least in that the number of late payments has continued to increase rapidly in all of the countries, although it is not increasing as rapidly in Estonia (see Chart 2:42). There is a risk that this will lead to actual loan losses for the banks. In Estonia, the corporate sector accounts for approximately 60 per cent of the late payments. In Latvia the percentage is somewhat lower – just over 50 per cent. It is mainly property and construction companies that have found it difficult to service their loans, which reflects developments on the property market where prices have fallen dramatically. It is expected that the economies of the Baltic countries will continue to weaken, even though the fall in GDP may slow down, which indicates that losses in the corporate sector will continue to increase. This in turn means that the probability that a company will be unable to service its loans will increase even more. Similarly, lower employment and higher unemployment are expected to weaken households' debt-servicing

<sup>100</sup> The government's stability fund and liquidity fund amount to around EEK 13 billion.

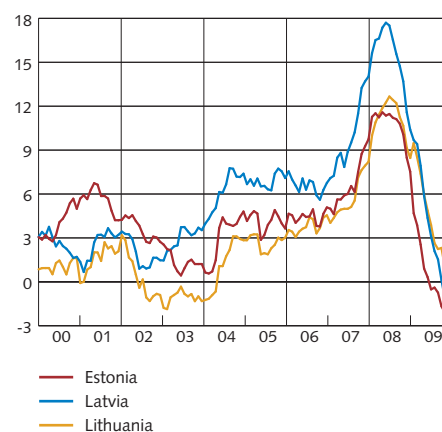
<sup>101</sup> When Latvia was granted the international loan, the foreign banks with significant operations in Latvia signalled their support for the programme. A conference was held in Stockholm in September at which the four largest foreign banks in Latvia once again confirmed that they would maintain the provision of credit to the country in line with the assumptions made when the IMF calculated the size of the loan.

**Chart 2:37. Nominal wages**  
Annual percentage change



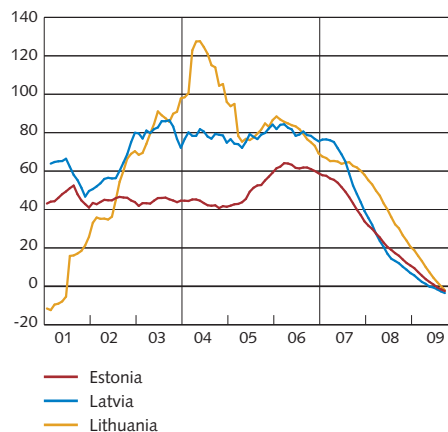
Source: Reuters EcoWin

**Chart 2:38. Harmonised index for consumer prices**  
Annual percentage change



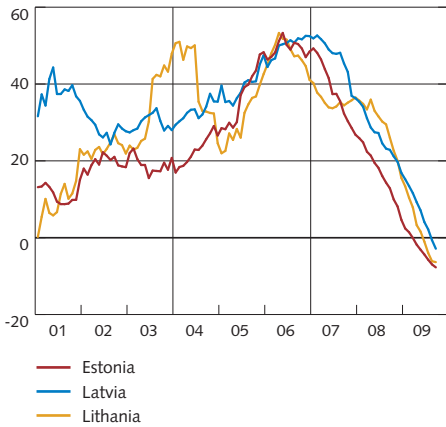
Source: Reuters EcoWin

**Chart 2:39. Household borrowing**  
Annual percentage change



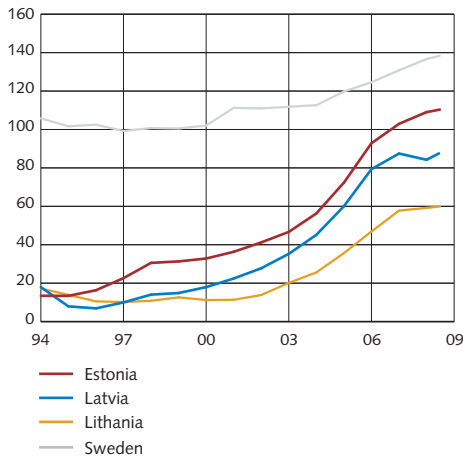
Source: Reuters EcoWin

**Chart 2:40. Corporate borrowing**  
Annual percentage change



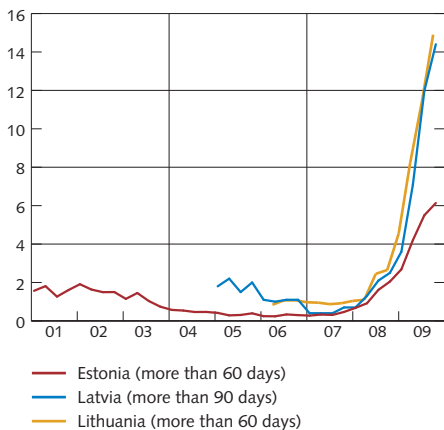
Source: Reuters EcoWin

**Chart 2:41. Households' and companies' debts in relation to GDP**  
Per cent



Sources: National central banks and Reuters EcoWin

**Chart 2:42. Late payments**  
Per cent of outstanding loans



Note. The definition of late payments may differ from country to country and comparisons between countries should therefore only be made with caution. In Lithuania, data refers to non-performing loans rather than late payments.

Sources: Eesti Pank, Financial and Capital Market Commission and Lietuvos Bankas

ability. Interest rates on loans are still low, however, a factor that will continue to ease the pressure on the balance sheets of households and companies. But as the countries have pegged their currencies to the euro, they are dependent on the monetary policy in the euro area (see the box Currency boards). If the euro area recovers faster than expected, the interest rate there may need to be raised more quickly than anticipated. This will also affect loan rates for Baltic households and companies, as most of the loans are taken in euro.

**To sum up, it is expected that credit quality among borrowers in the Baltic countries will continue to be weak.** This is mainly because the recession has deepened at the same time as the recovery in the economies is expected to be prolonged. Unemployment and bankruptcies have continued to increase, and this in turn has led to an increase in late payments. These are expected to continue to increase and peak in the course of next year. The weaker real economy is expected to have an impact on borrowers with a certain time lag, as the number of the unemployed who no longer qualify for unemployment benefit increases and as companies' liquid assets decrease. At the same time, the demand for credit is declining in all of the three countries, which entails poorer earnings capacity for the banks. There is a considerable risk that there will be further cuts in the national budgets, which threatens to further deepen the recession. In such a situation, there could be a further deterioration in credit quality. However, in the long term these cuts are necessary to correct public finances.

**The differences between the three Baltic countries are becoming increasingly evident.** Estonia has a more favourable position than Latvia and Lithuania. The budget deficit is relatively small in Estonia and is expected to be within the permitted boundaries for the adoption of the euro already this year. Through its Nordic trading partners, Estonia also has the potential to recover more quickly. At the same time, despite the significant fall in GDP, the labour market has not been hit as hard as in the other two countries and late payments have not increased as much or as quickly. One advantage for Lithuania is that households' and companies' burden of debt is lower than in Estonia and Latvia. All in all, however, the credit risk in the three Baltic countries has continued to increase in line with the expectations in the previous Financial Stability Report.

**S**everal countries in Sweden's geographical vicinity, for example Estonia and Lithuania, have currency boards.<sup>102</sup> This means that the currency in these countries is tied to a foreign currency at a fixed exchange rate. A currency board usually entails a high level of confidence in the fixed exchange rate. However, the disadvantage is that it is difficult for the central bank to manage liquidity shocks in the financial system. The box concludes with a stylised example demonstrating the manner in which the assets and liabilities of the central bank, the banks and the public would change in a system with a currency board, should the public wish to withdraw its deposits to hold these instead as banknotes and coins.

### *How do currency boards work?*

In a currency board system, the domestic currency is tied to a foreign currency at a fixed exchange rate (the anchor currency). In a currency board the central bank guarantees that holders of domestic banknotes and coins will always be able to exchange their currency for this foreign currency and vice versa.<sup>103</sup> The central bank secures this by ensuring that the amount of domestic currency (coins and banknotes plus reserves in central banks – the monetary base MO) is always equalled or exceeded by a foreign currency reserve.<sup>104</sup> The ratio of the foreign currency reserve to the monetary base must be at least one to one, but, as a rule, this ratio needs to be somewhat higher for the currency board system to be credible.

A country with a currency board has little influence of its own over monetary policy. Instead, the country 'imports' the monetary policy conducted by the anchor currency country. Consequently, currency boards have been regarded as attractive by many transition economies who have achieved price stability by linking their currencies to the currencies of countries with credible inflation policies. Lacking an independent monetary policy, economic adjustment is implemented instead through fiscal

policy. The disadvantage of a currency board system is that the central bank lacks the possibility of undertaking certain measures. For example, in a situation in which there prevails a significant lack of liquidity (such as during the current financial crisis), the central bank cannot provide large amounts of liquidity to the economy via domestic currency loans. This would lead to an increase of the monetary base at the same time as the foreign currency reserve remains unchanged. This would mean that the currency board would be unable to continue to ensure that the public would be able to exchange domestic currency for foreign at the prevailing exchange rate.

### *Assets and liabilities of the central bank, banks and the public in a currency board system*

The manner in which the assets and liabilities of the central bank, the banks and the public are changed by transactions in a currency board system can easily be illustrated with the aid of a theoretical example.<sup>105</sup> This example, which assumes that the bank system is comprised of foreign banks, is presented in Table B1. The table includes four sectors: the public, subsidiary banks in countries with currency boards, the central bank and the overseas parent bank.

Initially (t0), the public owns domestic currency assets in the form of banknotes and coins (100), bank deposits (50) and real estate (100). In order to finance this, the public has taken a mortgage loan (100) and financed the remainder with its own savings (equity).<sup>106</sup> This mortgage loan has been issued by the subsidiary bank which, in turn, has financed this with the aid of foreign currency borrowings from the overseas parent bank (50) and in the form of domestic currency deposits (50). The central bank has an initial foreign currency reserve of 100, equalled by banknotes and coins (100) on the liability side. In the example, the amount of the foreign currency reserve is equivalent to that of the outstanding banknotes and coins (the monetary base). This is also the minimum requirement in a currency board.

102 Latvia does not have a pure currency board, however effectively its monetary policy is implemented through a currency board-like arrangement. The Latvian currency is tied to the euro and is permitted to vary by  $\pm 1$  per cent. Just like in a currency board system, the Latvian central bank holds a currency reserve in an amount equivalent to or exceeding that of the domestic currency.

103 The remainder of this text assumes that the currency board is run by the central bank.

104 In reality, banks' reserves in central banks are included in the monetary base. This is excluded from this simplified example.

105 The example in the box is based on highly simplified assumptions regarding the assets and liabilities of the various sectors. The example takes no consideration of factors such as banks' reserve requirements in central banks, the possibility that overseas parent banks may provide liquidity or the restriction for banks in certain currency boards not to have significant foreign exchange risks, among others.

106 The example assumes that half of the public has loans in domestic currency, and half in foreign currency.

In the example, the central bank, at t0, can ensure that all parties (the public) are able to exchange their banknotes and coins from domestic to foreign currency. The central bank can namely sell its foreign currency reserve, receive foreign currency and pay this to the public. The currency reserve will then be exhausted, but, at the same time, there will be no outstanding domestic currency banknotes (as all domestic currency has been exchanged for foreign currency), meaning that the currency board remains unchanged.

What happens if the public wishes to withdraw its domestic currency deposits and retain these as banknotes and coins (t1)? The public approaches its bank (the subsidiary bank) and requests to withdraw its deposits as banknotes and coins. As the subsidiary bank in the example has no liquid assets available, it has to turn to the central bank and finance the purchase of banknotes by borrowing from the central bank. However, under a currency board, this is not possible as outstanding banknotes would exceed the foreign currency reserve in such a case. This is demonstrated by the example, in which the central bank provides a loan to the subsidiary bank (50) at the same time as outstanding banknotes

increase by an equivalent amount (50). In the example, outstanding banknotes and coins have increased to 150, while the foreign currency reserve remains at 100. This means, consequently, that the central bank can no longer guarantee that every party holding domestic currency banknotes will be able to exchange them for foreign currency.

To maintain credibility it is important that foreign countries or, in the example, parent banks are prepared to extend loans to the subsidiary bank in foreign currency, which can be exchanged for domestic currency banknotes.

It can be concluded that the currency board in the example can only guarantee that the public will be able to exchange the outstanding banknotes and coins existing in circulation in the stage t0. If the public wishes to withdraw its deposits to retain these in the form of banknotes and coins (or to convert these domestic currency deposits to foreign currency), the currency board is no longer able to make such a guarantee. This is because the amount of banknotes and coins plus deposits in domestic currency exceed the amount of the foreign currency reserve.

**Table B1. Assets and liabilities of various sectors – number of currency units**

<b>The public</b>					
Assets	t0	t1	Liabilities	t0	t1
Domestic currency banknotes and coins	100	150	Mortgage loan	100	100
Deposits in domestic currency	50	0	Equity	150	150
Real estate	100	100			
<b>Subsidiary in the country with the currency board</b>					
Assets	t0	t1	Liabilities	t0	t1
Mortgage loan in foreign currency	100	100	Deposits due to public in domestic currency	50	0
			Loan due to parent bank in foreign currency	50	50
			Loan due to central bank in domestic currency	0	50
<b>Parent bank abroad</b>					
Assets	t0	t1	Liabilities	t0	t1
Loan to subsidiary in foreign currency	50	50	Loan in foreign currency	50	50
<b>Central bank</b>					
Assets	t0	t1	Liabilities	t0	t1
Foreign currency reserve	100	100	Domestic currency banknotes and coins	100	150
Loan to subsidiary in domestic currency	0	50			

Note. The exchange rate in the above example is set at 1:1.  
Source: The Riksbank

## Ukraine and Russia

**The economic situation in Ukraine and Russia has improved somewhat, but the recovery is expected to be difficult.** In Ukraine the economy is expected to gradually improve and GDP growth is expected to be positive in 2010 (see Chart 2:43). This is largely because the global demand for commodities has gradually begun to recover. As Ukraine is largely dependent on exports of steel, the higher steel prices entail a slight improvement in the prospects for the Ukrainian economy. Demand and world trade prices for Russia's most important export commodity, oil, have also increased. This has contributed to a slight improvement in the prospects for the Russian economy, too, over the past six months. But compared with the world economy as a whole, the recovery in both countries will be difficult. This is because of the large losses in income during the global economic recession, with capital outflows and a substantial depreciation in domestic currencies.<sup>107</sup>

**During the summer Ukraine received a third payment from the IMF, but there is great uncertainty as to whether there will be continued support.** The IMF justified the third payment by saying that Ukraine's political leadership had begun implementing many of the measures that the IMF had set as a requirement. For instance, the leaders had begun to reform the country's bank sector and announced plans to increase government income through, for instance, higher gas prices. The fact that the IMF granted this payment to Ukraine contributed to credit rating agency Standard & Poor's raising Ukraine's outlook to positive from negative.<sup>108</sup> During the autumn, however, uncertainty has increased over whether the IMF will grant Ukraine a fourth payment. This is because that the country's leadership has decided on a more expansionary fiscal policy prior to the presidential elections at the beginning of 2010, which is not compatible with the IMF's requirements.<sup>109</sup> As a result of the uncertainty over the next payment from the IMF, Standard & Poor's lowered its outlook on Ukraine in October to stable from positive.<sup>110</sup>

### Ukraine's bank sector has been characterised by large loan losses.

These are mainly due to a large part of the banks' borrowers in Ukraine, like those in the Baltic countries having borrowed in foreign currency (see Chart 2:44). As the Ukrainian currency the hryvnia has depreciated substantially over the past year, by around 50 per cent against the dollar and the euro, the loan costs for borrowers have increased significantly and meant that many of them have ultimately

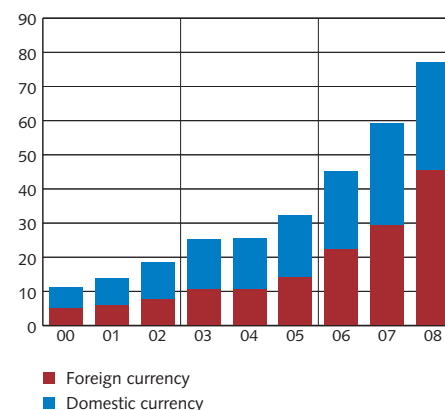
**Chart 2:43. GDP in constant prices**  
Annual percentage change



Note. Broken lines represent forecasts by Eastern European Consensus Forecasts.

Sources: International Monetary Fund, World Economic Outlook Database, October 2009, Eastern Europe Consensus Forecasts, October 2009, and the Riksbank

**Chart 2:44. Bank borrowing in foreign and domestic currency in Ukraine**  
Per cent of nominal GDP



Sources: Reuters EcoWin, IMF World Economic Outlook Database, October 2009, and the Riksbank

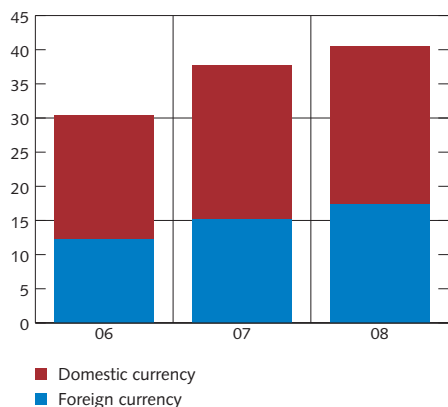
<sup>107</sup> See, for instance, the IMF (2009), "World Economic Outlook", October.

<sup>108</sup> See Standard & Poor's (2009), "Ukraine Outlook Revised To Positive On Budgetary And Financial Reform Progress; Ratings Affirmed", July.

<sup>109</sup> See the IMF (2009), "IMF Survey: IMF Urges Ukraine To Stick With Recovery Policies", November and "Mission Statement on Ukraine", Press Release No. 09/366, October.

<sup>110</sup> See Standard & Poor's (2009), "Ukraine Outlook Revised To Stable From Positive On Renewed Political Uncertainty; 'CCC+' Long-Term FC Rating Affirmed", October.

**Chart 2:45. Bank borrowing in foreign and domestic currency in Russia**  
Per cent of nominal GDP



Sources: Reuters EcoWin, IMF World Economic Outlook Database, October 2009, and the Riksbank

been unable to pay their loans. Borrowing in Russia, on the other hand, is not characterised to such a great extent by loans in foreign currency (see Chart 2:45). Nor does borrowing in Russia represent such a large share of the country's nominal GDP, and it has not grown as rapidly in recent years as has been the case in Ukraine. Nor have the loan losses in Russia been particularly large so far.

**The risk of loan losses remains high in Ukraine and will probably increase further in Russia.** This is in the light of the debt-servicing ability of the banks' borrowers in the Ukraine remaining poor, despite the slightly better indications. Swedbank, which is the Swedish bank with the largest lending in Ukraine, has already made write-downs corresponding to half of the lending it had at the beginning of the year. The country thus constitutes less of a risk than before. The Swedish banks with the largest lending in Russia, Nordea and Swedbank, appear to have assessed the risk of loan losses in Russia to be slight, compared with lending in Ukraine. During the third quarter, however, loan losses in Russia also increased. On the basis of the assessments of the Swedish banks' presence in the country, and of the Russian bank sector as a whole, the risk of increased loan losses could increase further.<sup>111</sup> In a comparison of the two countries, however, the probability of continued loan losses at present appears greater in Ukraine than in Russia.

<sup>111</sup> See, for example, FitchRatings (2009), "Russian Banks: Measuring Their Loss Absorption Capacity", August and Standard & Poor's (2009), "Banking Industry Country Risk Assessment: Russia", September.

## Summary of risks for the borrower sector

All in all, the economic conditions for the banks' borrowers have improved slightly since the previous Financial Stability Report, as economic activity has bottomed out earlier than anticipated. However, there is still uncertainty over economic developments ahead and thus substantial risks for the borrower sector in the future.

**There is a risk that economic activity in the Baltic countries will remain weak for a long time to come.** This is because households and companies will need to amortise their debts more quickly to prevent the debts continuing to rise in relation to nominal GDP. Unlike recent years, borrowers cannot assume that the value of houses and other assets will continue to rise rapidly or that debts will be weakened by a high inflation rate. The scope for further consumption and investment is therefore limited. This risks delaying the recovery in the economies. This would in turn lead to late payments increasing more rapidly again, particularly as unemployment benefit periods expire and companies' profits decline. The same applies if one of the countries will be forced to abandon its fixed exchange rate. In this case, debts measured in domestic currencies would increase rapidly in relation to nominal GDP, borrowers' debt-servicing ability would be undermined and loan losses would rise more rapidly than in the main scenario.

**Consolidation of public finances is of central importance to stability in all three Baltic countries.** If the staying power of the current fiscal policy tightening were to be called into question in one of the countries, investors might reconsider risk in the region as a whole. However, this contagion risk has declined slightly compared with the most acute financial crisis a year ago. At the same time, there are signs that investors' confidence in the region has begun to return to some extent, including the substantial interest in the issue of the Lithuanian government bond. Nor is it likely that Estonia would be as hard hit as the other countries, as it is expected to be able to meet the Maastricht criteria.

**Latvia is entirely dependent on the international support package to cover the deficit in the national budget.** Developments in the period ahead are thus largely dependent on how the country complies with the demands of the international lenders. Political opposition in the coalition government has made it more difficult in the autumn to push through the reinforcement of the budget for 2010 promised in accordance with the terms of the loan. This concerns a total of 500 million lats, or a good three per cent of GDP. However, the budget has now been accepted by parliament after a first reading of the bill. A final political agreement on the budget must be reached prior to the IMF's review in December if the international loan is to be paid out.

**In Lithuania, one of the risks is the domestic banking system.** To date, the domestic banks, compared to the international banks, have not made any substantial provisions for future loan losses.<sup>112</sup> If the loan losses prove to be considerable, this may lead to a crisis of confidence. In such a situation, the ability of the Lithuanian central bank to provide liquidity assistance is limited (see the box on Currency boards) and it is not possible to disregard the risk that the government will be forced to take over banks.

**The current low interest rates may conceal payment problems in some household groups in Sweden, which may emerge later on.**

There is a risk that households will build up excessive debts in a situation where interest rates are abnormally low and the conditions are favourable. These risks will only be visible a few years ahead when interest rates return to more normal levels and the high indebtedness may then be difficult to bear. This risk is heightened by the fact that around 70 per cent of households' new loans are with a variable interest rate. In this context one can ask to what extent households have taken into account the fact that the interest rate will rise as the economy recovers. Individual households, which for various reasons have misjudged their debt-servicing ability, will otherwise suffer problems meeting their payments. If the economy recovers more quickly than expected, the interest rate may rise sooner and possibly at a faster rate than most people are assuming.<sup>113</sup> According to the Riksbank's stress tests on micro data, however, households in general should manage higher interest expenditure and this risk does not constitute any direct threat to financial stability. Nonetheless, it could affect other parts of the economy, as households would then be forced to cut back on other consumption than housing. This affects, for instance, companies' prospects and ultimately also the prospects for the banks' earnings and loan losses.

**If households have unreasonable expectations of future interest rates, their debt ratios and house prices may rise at a rate that is unsustainable in the longer term.** Purchasing and financing housing entails long-term commitments. To avoid household indebtedness and house prices developing at a rate that is not sustainable in the long-term, there is thus reason for borrowers to now base their assessments on the interest rates that are expected to prevail in a couple of years' time and which are expected to be much higher than the present level. Moreover, it is important that the banks ensure that their lending is sustainable in the long term by having sufficient margins in their credit calculations. In this context it may be necessary to review the loan-to-value ratios and amortisation rates. If this is not

<sup>112</sup> In Lithuania the domestic banks account for around 14 per cent of the assets in the bank system. In Latvia the domestic banks have around 30 per cent of the assets. The domestic bank system in Estonia is very small and accounts for only 1 per cent of the market.

<sup>113</sup> See Sveriges Riksbank (2009), "Monetary Policy Report 2009", October.



sufficient to prevent a development that may be untenable in the long term, Finansinspektionen can take measures.

**There are several factors that can mean that the credit risk in the banks' loan portfolios to Swedish companies, particularly lending to property companies, is greater than expected.** One such factor

is if the recovery in economic activity is delayed, or if new shocks arise in the financial markets. Then Swedish companies may face funding problems and higher lending rates. And if the trend of continued falling profitability coincides with renewed financial turmoil, more companies will probably find it difficult to finance their interest expenditure. There is another risk based on the effects of developments in the real economy tending to affect the commercial property market later than other sectors, at the same time as changes in interest rates have more direct effects. In the future, improved economic activity and employment are expected to lead to an increase in demand for property services in the rental market and thus an increase in demand for offices and other commercial property. However, the Riksbank's forecast is that employment will not begin to rise again until 2011. At the same time, increases in the repo rate are expected to begin and quickly return it to more normal levels during autumn 2010, when economic activity improves.<sup>114</sup> Higher interest rates mean that the property companies' interest coverage ratio and thereby their debt-servicing ability will deteriorate. This means that the property companies may have increased costs before their income begins to rise again. Moreover, there is uncertainty over the property companies' ability to find funding, particularly with regard to the loans that will gradually mature in the coming years. There is a risk that this, taken together, will hit the banks' loan losses harder than is assumed in the report's main scenario.

**Stress tests for the property companies show some sensitivity to changes in property values, rent income and interest rates.**<sup>115</sup> The results of the tests show that it would require a fall in the value of the median company's property corresponding to 30-35 per cent for the value of the company's liabilities to exceed the value of its assets, and thus for the company to be insolvent. Rental income would need to fall by 35-40 per cent for the interest coverage ratio of the company to fall below 100 per cent, and for its cash flow to then be insufficient to cover interest expenditure. The borrowing rate would need to increase by almost three percentage points to cause the corresponding deterioration. All in all, the most worrying scenario would be a combination of falling property values, falling rental income and rising borrowing rates.

114 See Sveriges Riksbank (2009), "Monetary Policy Report", October.

115 The test is based on data reported for the period January-June 2009 for the 18 property companies listed on NASDAQ OMX Stockholm.



### Developments in the banks - in brief

As a result of the improvement in the functioning of the financial markets, funding for the banks has become more readily available and less expensive. However, the central banks around the world are continuing to provide liquidity and government programmes are guaranteeing a large part of the global banking system. At the same time, the recovery of the economy at home and abroad has begun and it appears that growth will be somewhat stronger than many observers expected only a few months ago.

This also means that the credit risk for the Swedish banks has declined. Nevertheless, the credit risk is the predominate risk for the major Swedish banks and loan losses have increased rapidly over the latest four quarters.

How high the loan losses will be in the period ahead is still uncertain. In the Riksbank's main scenario, loan losses for the four largest Swedish banks are expected to reach a total of SEK 155 billion in the period 2009-2011, which entails a downward adjustment compared to the main scenario in the previous Financial Stability Report. This is mainly due to the fact that the forecast for macroeconomic development is brighter. At the same time, the outcomes for this year so far have been better than expected. The assessment is that the credit risk is greatest in the Baltic countries and approximately half of the total losses in the main scenario are expected to stem from the banks' operations in these countries.

The Riksbank's assessment is that the banks have sufficient capital to cope with the loan losses assumed in the main scenario, and the banks still appear to be well-capitalised in an international perspective.

During the autumn of 2009, the Riksbank and Finansinspektionen has investigated how the Swedish banks in the Baltic countries are handling the rapidly-growing stock of problem loans and the collateral relating to these loans.<sup>116</sup> The banks are following good international practice and they have a realistic view of the size of their problem loans.

Uncertainty about the future development of the economy and its effects on the banks is still high. The Riksbank has therefore examined the banks' resilience towards a much worse scenario than expected in a stress test. This test shows that all of the major Swedish banks perform better in this stress test than in the test that was conducted in June. This is largely due to the improvement in the banks' capital situation. At the same time, the current stress test relates to a brighter main scenario than the test in the previous report which entails lower loan losses for the banks.

<sup>116</sup> Problem loans usually refer in the broad sense to unregulated loans and loans assessed to be in the risk zone for becoming unrealised loan losses.

The Riksbank's analysis of the banking sector focuses on the four major Swedish banks: Handelsbanken, Nordea, SEB and Swedbank. Together, they account for approximately three-quarters of the deposits from and loans to the Swedish public. These banks are thus of decisive importance to financial stability in Sweden. The major banks also have extensive operations abroad and a significant proportion of their risk exposure is therefore also abroad. The Riksbank's analysis thus covers the bank Groups, which include both Swedish and foreign branches and subsidiaries.

The chapter begins with a description of the effects of the financial crisis on the Swedish banks. This is followed by a review of the major banks' earnings and profitability and then by a description of the banks' lending and the risks associated with this. The Riksbank's main scenario for the banks' loan losses is also presented in this section. The bank's capital, which is an important part of the assessment of their ability to cope with potential losses, is then analysed. This is followed by a discussion of the banks' funding and liquidity risks. Next, there is a section on contagion risks. The chapter concludes with an account of the stress test conducted by the Riksbank.

#### THE EFFECTS OF THE FINANCIAL CRISIS ON THE SWEDISH BANKS

##### **The banks' external circumstances have improved in recent months.**

Since the previous Financial Stability Report was published in June, the functioning of the financial markets has improved both in Sweden and abroad. This is reflected, for example, by the fact that financial institutions can now fund their operations on the financial markets to a greater extent and at a lower cost than during the most acute phase of the crisis. At the same time, the recovery of the economy at home and abroad has begun and it appears that growth will be somewhat stronger than many observers expected only a few months ago. However, development is still still uncertain and the recovery will take time. All-in-all however, this means that the situation of the Swedish banks and their borrowers has improved. This positive development is not clear-cut, however, and there are still parts of the financial markets that are not working well. In addition, the development of both the financial sector and the real economy is largely due to the dramatic interest rate cuts made by central banks around the world and to the other support measures implemented by the authorities in general. These measures are still of significance to the functioning of the financial markets.

**The banks' credit risk has declined but is still the predominant risk.**

The brighter economic outlook has led to the downward revision of the Riksbank's main scenario for the Swedish banks' loan losses, but there is considerable uncertainty about how high they will actually be. As a result of the risk of future losses in the wake of the global recession, banks all over the world have sought new capital in the form of rights issues and capital injections from the State. For example, three of the major Swedish banks have conducted new issues<sup>117</sup> and all four of them have also reduced or completely refrained from dividends to their shareholders.

**Stricter regulations are a precondition for a stable global financial system.** One of the most central lessons to be drawn from the crisis is that financial regulation and supervision has focused too much on identifying and preventing risks in individual institutions and on individual markets. This is why several of the current proposals for the revision and development of regulation and supervision adopt a systemic perspective (see the article "Reducing the risk of future crises - a stronger macroprudential framework"). These new regulations will probably lead to stricter requirements regarding the capital and liquidity of the banks in that the current capital requirement will be complemented with a non risk-weighted measure to avoid the level of indebtedness becoming too high and to reduce the effect of procyclical factors that have a negative impact on the real economy (see the box "The international regulation agenda"). While this review of the international regulation of the financial sector is necessary, there is a risk that it will create uncertainty about the earnings and profitability of the banks in the future until the details in the new regulations become clear.

117 Swedbank has conducted two rights issues totalling SEK 27.5 billion, SEB's rights issue amounted to SEK 15 billion and Nordea's to EUR 2.5 billion.

## The international regulation agenda

**T**he operations of Swedish banks and financial companies are regulated by laws and statutes that largely originate in internationally agreed regulations and guidelines. In the first instance, the Swedish regulations are governed by the regulations formulated at the EU level which Sweden, as a member state, is obliged to incorporate into national law. The EU legislation is in turn largely based on guidelines and standards drawn up in other international bodies such as the Bank for International Settlement (BIS), the Financial Stability Board (FSB) and the International Accounting Standards Board (IASB). As a result of the financial crisis, wide-ranging discussions are now underway in these bodies on how financial regulation should be designed to prevent and manage future crises. Above all, these discussions concern the need to amend and complement existing international regulations and guidelines, but they also concern how to achieve a greater degree of coordination in areas that have not previously been subject to international harmonisation. As the outcome of this international regulation work will have a significant impact on the Swedish regulations, and thus on the Swedish banks and other financial companies, this box presents a brief description of some of the most important changes that are being discussed internationally.

### *Capital in the banking sector*

One of the most central lessons to be learned from the crisis is that the banks' capital buffers have not been sufficiently resilient to cope with the losses that have arisen. The international standards drawn up by the BIS (in the Basel Committee) that regulate the composition and size of the capital – the so-called Basel II regulations – will therefore be reformed in several respects:

- *Stricter and more harmonised standards for what may be included in the capital base.* Most of the banks' Tier 1 capital should consist of common share capital and retained earnings. The regulations governing other items that may be included in the capital will be harmonised and tightened up. For example, the regulations for capital instruments with debt-like properties, so-called hybrid capital, will be reviewed.
- *Higher capital requirements.* The capital requirements for the assets that the banks have in their so-called trading book will be tightened up.<sup>118</sup> Compared to the current regulations, an average of more than double the amount of capital will be required for this type of asset. Stricter capital requirements will also be introduced for certain securitised assets. A discussion is also underway about increasing the capital requirements more generally when conditions on the financial markets have stabilised. A special capital surcharge for systemically-important banks is under consideration, for example.
- *A non risk-weighted capital requirement.* With aim of preventing the banks' level of indebtedness becoming too high in relation to their capital, a non risk-weighted capital requirement (leverage ratio) will probably be introduced. This requirement is intended to act as a "floor" if the risk-weighted capital requirement falls below a certain level. It is not yet clear how this leverage ratio will be calculated and at what level it will lie.
- *A special contracyclical capital requirement.* To ensure that the banks have sufficient capital to cope with losses and run their operations without disruptions over the entire economic cycle, a special "contracyclical" capital

<sup>118</sup> The trading book includes assets and positions that are held so that they can be sold at short notice on the financial markets in order to benefit from changes in market prices.

requirement is being considered. By linking the capital requirement to an appropriate indicator, the intention is that the banks' capital should be built up when times are good and be allowed to shrink when times are not so good.

In July 2009, the Basel Committee adopted new standards regarding the capital requirements for the trading book and securitised assets. The banks and supervisory authorities must begin to apply these standards no later than 31 December 2010. With regard to the other aspects above, new standards will be adopted before the end of 2010. It has not yet been decided when these standards will come into force.

In the EU, work on incorporating the new Basel II standards into EC law has already begun. At present, a directive is being prepared that is based on the standards adopted by the Basel Committee in July 2009 concerning capital requirements for the trading book and certain securitised assets. The plan is that these regulations will begin to apply in the member states on 1 January 2011. In addition, preparatory discussions are being held within the areas where the Basel Committee has announced that there will be changes but has not yet adopted final standards. It is not yet clear when these standards will come into force, but the EU will probably comply with the dates decided on by the Basel Committee.

In a number of areas, the EU has also chosen to go ahead with a number of own regulation initiatives that in some respects entail more far-reaching reforms than those planned by the Basel Committee. In the spring, for example, the EU decided on a legislative package consisting of the following regulatory reforms with regard to capital requirements:

- *Harmonised regulations for the use of hybrid capital.* Previously, there have been no regulations in EC law that govern the banks' use of hybrid instruments. The EU has therefore decided to introduce

regulations that set criteria for the types of hybrid capital that may be included in Tier 1 capital. The new regulations also set limits for the proportion of the capital that may consist of hybrid instruments. When the Basel Committee adopts new standards for the composition of the capital base, it will probably be necessary to adjust these regulations.

- *Securitisation.* Institutions that originate securitised instruments are themselves required to retain a certain risk exposure to these instruments or their underlying assets. The institutions that invest in securitised instruments are also required to conduct a thorough examination of these instruments.
- *Reformed regulations for concentration risks.* The existing regulations that limit the size of the exposures a bank may have against an individual counterparty, or group of connected counterparties, will be reformed. The primary aim of the changes is to strengthen harmonisation in the EU by removing national discretions. One important change is that the limits for exposures between banks will be tightened up.

These regulations will come into force in the member states on 1 January 2011. Moreover, the European Commission has announced that it wishes to tighten up the capital requirements governing the banks' mortgage lending. First, the Commission wishes to introduce a special capital add-on for mortgages provided in a currency other than that in which the borrower has his or her income. Secondly, the Commission wants to introduce a fixed upper limit for the loan to value ratio (the size of the loan in relation to the value of the property) at which the bank can apply a lower capital requirement. It is highly likely that the proposed limit of 40 per cent would entail a significant increase in the capital requirement for most of the banks in the EU.

However, these proposals have not been formally adopted by the Commission as yet, and they have therefore not been the subject of negotiations between the member states. It is thus uncertain whether these proposals will be implemented and if so how they will finally take shape.

#### *Liquidity regulation*

Throughout the financial crisis, the liquidity situation in the global financial system has been very strained. The banks' liquidity buffers and their strategies for handling liquidity have in many cases been inadequate to cope with the shortage of liquidity. Many central banks have thus been forced to inject large quantities of liquidity to the system in order to maintain stability on the financial markets. Given this background, the Basel Committee is working to create a global standard for liquidity management. This standard aims to increase the harmonisation of international liquidity supervision and to strengthen the banks' resilience to liquidity strain. The standard entails a greater element of binding and quantitative requirements concerning the banks' liquidity management and is based on two main components.

- *Liquidity coverage ratio.* The banks will be required to hold a certain quantity of unencumbered and highly liquid assets in relation to the payment flows that may occur in the short term and under strained conditions.
- *Structural liquidity ratio.* In order to ensure sound, long-term liquidity management, quantitative requirements regarding the quantity of long-term and stable funding that a bank must have will be introduced.

These standards are to be set and adopted by the Basel Committee before the end of

2010 and will probably be incorporated into EU legislation after this. The Basel Committee has not yet decided a date for when the standards will begin to apply and it is therefore also uncertain when any possible new EU regulations may begin to apply.

#### *Accounting*

The financial crisis has also led to an extensive debate about the importance of accounting regulations to financial stability. Above all, the discussion has concerned whether the existing regulations for the accounting of financial instruments have aggravated the crisis. The International Accounting Standards Board (IASB), the body that draws up international accounting standards, is therefore conducting a review of the existing standards which, among other things, comprises the following initiatives:

- *New regulations for classification and measurement of financial instruments.* In order to simplify and improve the accounting of financial instruments, the number of measurement categories for financial instruments should be reduced. The instruments should in the future either be valued at their fair value<sup>119</sup> or at amortised costs.<sup>120</sup> The measurement category that should be used is governed, among other things, by the purpose for which the asset is held. This should ensure that the regulations will better reflect the actual risks in the operations concerned.
- *Provisions for expected losses.* Under existing accounting standards, it has only been possible for a bank to make provisions for losses if an actual event has occurred that can reasonably be expected to affect the payment flows for one or several loans negatively. The proposed new regulations offer the possibility to

<sup>119</sup> In simple terms, accounting at the fair value means that a financial instrument should be accounted at the market value it has on the accounting date concerned.

<sup>120</sup> Accounting at the value of the amortised costs means that a financial instrument is accounted at the sum paid at the time of issue adjusted for the accrued payment flows, for example interest payments.



make provisions on the basis of more long-term expected losses, without the requirement that the provisions should be linked to any specific event. This will permit the banks to leave a good margin for expected future losses at an early stage. One important aim of this is to enable the banks to build up buffers when times are good that they can then use when times are not so good.

New standards for the classification and measurement of financial instruments were published in November 2009. These will begin to apply on 1 January 2013 but may already be used on a voluntary basis for the financial statements of 2009. It is expected that new standards relating to other aspects will be adopted in 2010. Amendments to the IASB's standards will become applicable within the EU after the Commission, in consultation with national experts, decides that they should be adopted. This normally takes place within a few months following the IASB's decision to adopt new standards. With regard to the new standards for the classification and measurement of financial instruments, however, the Commission has decided to postpone their introduction indefinitely. This means that the EU banks will not apply these regulations in their financial statements for 2009.

#### *Unregulated companies and markets*

The degree of regulation varies between different types of participants in the financial system. While banks are subject to extensive regulation, other companies, institutions and markets are unregulated. As a result of the crisis, discussions are now underway on the need to extend regulation to cover larger parts of the financial system.

- *Hedge funds and private equity funds.* In April 2009, the European Commission adopted a proposal to introduce a harmonised regulation of managers of

hedge funds and private equity funds at the EU level. The proposal requires that funds over a certain size must have a special license for their operations. The funds will also be subject to a capital requirement. The proposals also include the possibility to regulate the leverage the funds may have. According to the schedule, these regulations should be adopted before the end of the year. However, it is uncertain whether this will be possible as the proposal has met considerable opposition in the member states.

- *Credit rating agencies.* At the end of 2008, the European Commission adopted a proposal on the regulation of credit rating agencies. Under this proposal, the agencies will become subject to registration and supervision by the authorities. Requirements will also be set to ensure that the rating methodologies are transparent. These regulations are to a great extent based on the international standards produced by the International Organisation of Securities Commission (IOSCO). The regulations has been adopted by the Council of Ministers and the European Parliament and will become valid in the member states as of November 2009.

#### *Trading in financial instruments*

A lot of attention has been devoted to the question of whether regulations are required to encourage market participants to use central counterparties for OTC derivatives. This question has come up because the markets for these instruments have functioned less effectively during the crisis than the markets for derivatives that are cleared through central counterparties (see the box on central counterparty clearing). In the USA, a bill is under preparation that will require standardised OTC derivatives to be cleared through regulated central counterparties. A process is also underway in the EU to review

the need for a regulation of the markets for OTC derivatives. The European Commission recently presented a number of preliminary proposals for measures which, following consultation with the member states and the market participants, will be presented as a formal regulation proposal in 2010. This includes, among other things, a proposal that instruments that are not cleared through a central counterparty should be subject to a higher capital requirement.

#### *Handling of distressed banks*

The tools that the authorities have at their disposal for handling distressed banks have in many cases been ineffective during the current crisis. Due to differences in national legislation, it has been particularly problematic to handle problems at banks that do business in several countries. At the global level, several projects are therefore in progress, for example in the Basel Committee and in the FSB, to draw up proposals on how crises in cross-border banks can be handled effectively. In the EU, the Commission is working to produce proposals for a harmonised, European crisis management framework for banks. This comprises everything from measures that make it possible to intervene at an early stage of a crisis to regulations governing the reconstruction and winding-up of insolvent banks. The plan is to present a proposed directive in 2010.

#### *Remuneration systems*

Many commentators believe that the remuneration systems in the financial sector have led to increased risk-taking and have thus contributed to the financial crisis. In the spring of 2009, the FSB drew up a number of guiding principles for sound compensation practices. These include increasing the supervision and transparency of the institutions' remuneration models, strengthening board responsibility for remuneration systems and forging a clear link between remuneration and risks. The G20 countries have supported these principles and on the basis of this the FSB has drawn up a standard for how these principles can be implemented in financial regulation and supervision. In the light of the FSB's principles and standards, the European Commission has produced a proposal for the regulation of remuneration systems which, if all goes according to plan, will begin to apply in the member states on 1 January 2011. There is already, however, a non-binding recommendation from the European Commission concerning remuneration policies in the financial services sector. In Sweden, Finansinspektionen has been assigned by the government to implement this recommendation in the Swedish regulations no later than 31 December 2009. In the proposal it has presented, Finansinspektionen has chosen to take account of the FSB's guidelines to the extent that they are more precise in relation to the EU recommendation.

## Earnings and profitability

**The Nordic operations are the basis for the profits of the Swedish banks.** Approximately 90 per cent of the pre-tax profits come from the Nordic countries, with Sweden accounting for approximately half. The bank's largest earnings items are net interest income, which is the difference between interest income and interest expenses, and net commission income, which constitutes charges for various services and products. These two items account for around 80 per cent of earnings. On the cost side, the banks' personnel costs are the largest cost item.

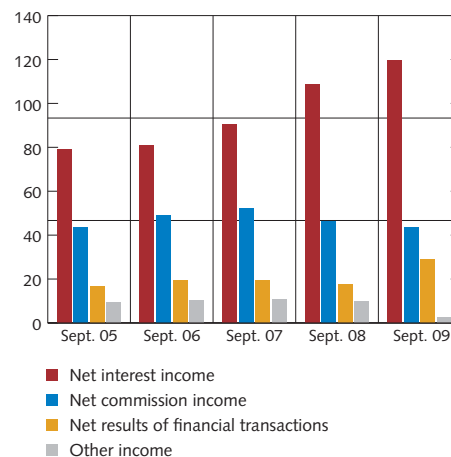
**In recent years, net interest income is the earnings item that has increased most** (see Chart 3:1). The main reason for this is the increase in the banks' lending. Most of the lending of the four major banks is in the Nordic countries, although there are certain differences between the banks regarding the geographical distribution of lending operations. Nordea, for example, has a smaller proportion of such operations in Sweden. On the other hand, a comparatively larger part of Nordea's lending and operating profits relate to the other Nordic countries than in the case of the other banks. Lending to the Baltic countries, which has attracted a lot of attention recently, accounts for approximately six per cent of the total lending of the major banks. For Swedbank, lending to the Baltic countries accounts for 15 per cent of the bank's total lending, while the corresponding figure for SEB is 13 per cent and for Nordea three per cent (see Table 3:1).

**Table 3:1. Lending in the major banks, geographical breakdown, September 2009**  
Percentage share of total lending to the public and SEK billion

	Handelsbanken	Nordea	SEB	Swedbank	Total
Sweden	68	25	56	80	50
Norway	12	16	3	*	10
Denmark	4	28	1	*	13
Finland	6	18	1	*	9
Estonia	*	1	4	6	2
Latvia	*	1	3	4	2
Lithuania	*	1	6	4	2
Germany	1	*	25	*	4
UK	4	*	*	*	1
Rest of Eastern Europe	<1	3	<1	2	2
Rest of world	4	7	2	4	4
Total lending to the public, SEK billion	1,476	2,890	1,207	1,245	6,818

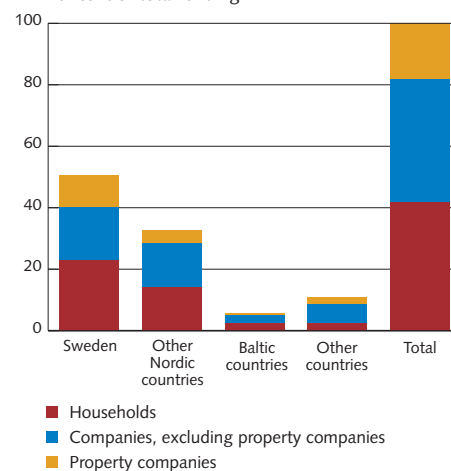
Note. \*Indicates that there is no data on lending in the country or that lending is very limited. \*\*The rest of Eastern Europe comprises Poland, Russia and Ukraine.  
Sources: Bank reports and the Riksbank.

**Chart 3:1. The banks' earnings**  
SEK billion



Sources: Bank reports and the Riksbank

**Chart 3:2. Lending per geographical area and borrower category, September 2009**  
Per cent of total lending



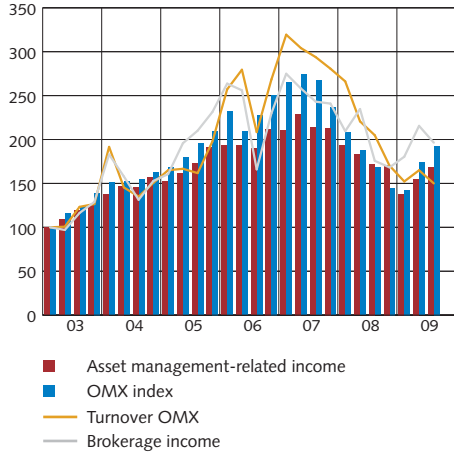
Sources: Bank reports and the Riksbank

**Chart 3:3. Net interest income in relation to interest-bearing assets**  
Per cent



Note. Net interest income is stated as for rolling four quarters in relation to average interest-bearing assets.  
Sources: Bank reports and the Riksbank

**Chart 3:4. The major banks' securities-related commission income and turnover and stock market index**  
Index: 2003, Q1 = 100



Sources: Bank reports, NASDAQ OMX and the Riksbank

**Net interest income continued to increase during the reporting period.**<sup>121</sup> This is partly explained by the fact that the banks' deposit and lending volumes have increased. In Chart 3:3, it can be seen that the net interest margin, that is net interest income in relation to interest-bearing assets, widened during the reporting period. If the increase in net interest income had only been driven by increased volumes, the net interest margin would have remained largely unchanged. Instead, both the lending margin and the deposit margin have had an impact on the net interest margin.<sup>122</sup> As the banks have not cut their lending rates as much as their funding costs have declined recently, their lending margin has increased. However, this effect is counteracted to some extent by the fact that the banks' deposit margins have declined as a result of the low interest rates recently.

**Net commission income varies in line with the development of, and turnover on, the stock market.** Higher share prices affect the charges for assets under management and the turnover affects brokerage income. Consequently, net commission income began to decline in the first quarter of 2007 before rising again in the second and third quarters of 2009 (see Chart 3:4). Other forms of net commission income, such as charges for payments and lending, increased by five per cent during the reporting period. The development of net commission income thus depends on the development of, and turnover on, the stock market and on the level of activity in the economy.

**All-in-all, the banks' earnings, that is their profits before loan losses, continued to increase during the period, but at a lower rate than previously.** However, the banks' provisions for future loan losses have increased substantially. This has meant that profit after loan losses has continued to decline. As a result of this, profitability has declined despite the increase in earnings. Since mid-2007, the profitability of the major banks, measured as return on equity, has declined following four years in which it increased. During the reporting period it amounted to 10 per cent, which can be compared to the average of 15 per cent for the last 10 years.

**The Riksbank assesses that the banks' income and earnings will continue to increase in the period ahead.** Net interest income is expected to increase despite the fact that deposit margins will be squeezed by the low interest rates. This is because it is assumed that the banks will continue to keep the lending rate at a relatively high level so that the lending margin increases and thus contributes to

<sup>121</sup> The reporting period comprises the latest four-quarter period running to the end of the third quarter 2009. Unless stated otherwise, comparisons are made with the preceding four-quarter period. The figures are adjusted for one-off effects.

<sup>122</sup> The lending margin refers to the difference between the banks' average funding costs and their average lending rates, and the deposit margin refers to the difference between what the banks receive for investing in the market and the average interest rate that they pay on their deposits.

higher net interest income. The lower interest rates will at the same time help to maintain the demand for loans. Total lending from the major banks is therefore expected to continue to increase over the next 12 months, although the rate of increase will be lower. All-in-all, it is most probable that the banks will compensate for the lower deposit margins by increasing lending margins. In combination with the assumed slight increase in lending, this will probably lead to a continued increase in net interest income, although the rate of increase will slow down. In the longer term, all else being equal, higher interest rates will contribute positively to net interest income as the lending margins will increase.

## Lending and credit risk

### The credit risk the largest risk in the banks' operations.

Approximately 60 per cent of the assets of the major banks consist of lending to the public (see Chart 3:5). The banks also have assets that are exposed to market risk, such as interest-bearing securities, but these constitute a much smaller component of the total risk. Different exposures mean that the credit risks differ from bank to bank. Table 3:2 presents the banks' exposures to different risk areas. The respective exposures are specified in relation to the core Tier 1 capital, which is the core of the capital required to cover unexpected losses. A high value in the table thus entails a higher credit risk than a low value. In the table it can be seen that Swedbank has the relatively highest exposure to the Baltic countries and that SEB has the next highest. In the case of Handelsbanken, it is primarily lending to commercial property companies that constitutes the most prominent risk exposure, while Nordea is notable for its exposures to the shipping sector and risk capital companies.

**Table 3:2. The banks' lending to risk areas in relation to their core Tier 1 capital, September 2009**  
Per cent

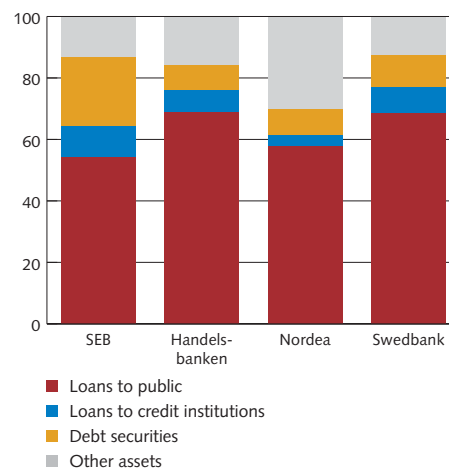
	Swedbank	SEB	Nordea	Handelsbanken
Shipping	24	30	57	24
Private equity companies	19	19	41	-
Commercial real estate excluding lending in the Baltic countries	90	125	104	499
Baltic countries	237	166	42	0
– of which commercial real estate	37	28	5	0

Note. "–" denotes that no data is available. Swedbank's core Tier 1 capital includes the new issue of SEK15 billion conducted in October 2009.

Sources: Bank reports and the Riksbank

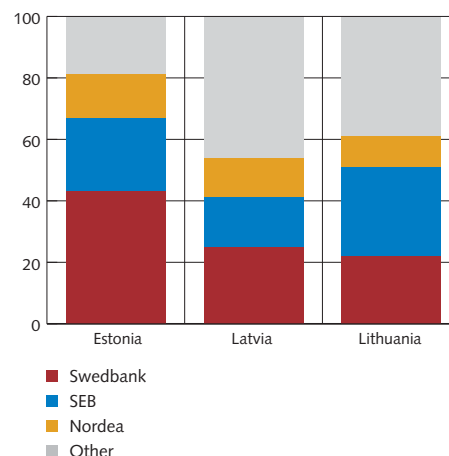
**Lending in the Baltic countries is declining.** To a certain extent, this decline is explained by the fact that the banks have become more cautious in their lending. In addition, demand has fallen as a result of the weaker economic situation in these countries. However, the major Swedish banks are still the market leaders in the region (see Chart 3:6). At

**Chart 3:5. Allocation of total assets**  
Per cent, September 2009



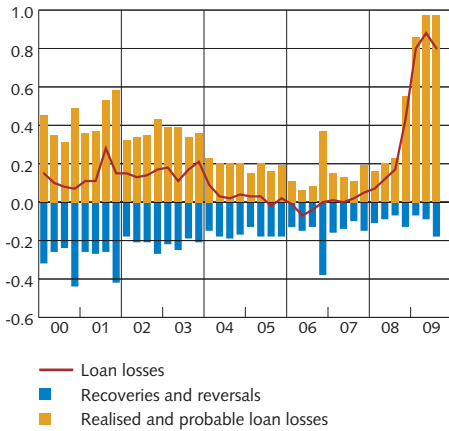
Sources: Bank reports and the Riksbank.

**Chart 3:6. Market shares of lending in the Baltic countries**  
Per cent, September 2009



Sources: Bank reports and the Riksbank

**Chart 3:7. The major banks' loan losses**  
Percentage of lending



Note. Annualised data  
Sources: Bank reports and the Riksbank

the end of the third quarter 2009, the major banks' lending to the public in the Baltic countries totalled SEK 400 billion, which corresponds to six per cent of the major banks' total lending. Per country, the major banks' lending to the public was SEK 142 billion in Estonia, SEK 120 billion in Latvia and SEK 138 billion in Lithuania. GDP growth is expected to be negative in all the three countries this year and next year. Consequently, Nordea, SEB and Swedbank have increased their provisions for probable loan losses in the Baltic countries.

### CREDIT RISK

**The loan losses of the major banks as a percentage of their lending have increased substantially.** However, these loan losses are now expected to be somewhat lower than in the main scenario presented by the Riksbank in the previous Financial Stability Report. This is because the recovery of the real economy is expected to be stronger. The loan losses increased to slightly less than SEK 51 billion during the reporting period and amounted to 0.7 per cent of lending. This can be compared to the figures of almost SEK 6 billion and 0.1 per cent for the previous reporting period. Loan losses increased above all towards the end of the period and calculated as an annual rate loan losses in the third quarter amounted to SEK 57 billion, which corresponds to 0.8 of lending (see Chart 3:7). The main explanation for the increase in loan losses is that provisions for probable loan losses have increased. At present these provisions amount to slightly more than SEK 60 billion – realised loan losses are still low. For a more detailed explanation see the box "What are loan losses?" in Financial Stability Report 2009:1.

**Loan losses stemming from the banks' operations in the Baltic countries amounted to SEK 22 billion during the reporting period** (see the box "How the banks have handled problem loans in the Baltic countries"). This corresponds to approximately 40 per cent of the major banks' total loan losses. 72 and 59 per cent of SEB's and Swedbank's total loan losses stem from the Baltic countries respectively, while the corresponding figure for Nordea was ten per cent. Nordea's loan losses consisted to 44 per cent of losses in its Danish operations. Around two thirds of Handelsbanken's loan losses came from the bank's Swedish operations.

### HOW LARGE WILL THE LOAN LOSSES OF THE SWEDISH BANKS BE?

In this section, the Riksbank presents its assessment of the expected development of loan losses in the major Swedish banks. This main scenario extends to the end of 2011 and should be kept separate from the stress test that is presented later in the Report.

By dividing up the total lending of the major banks in terms of different categories of borrowers and the geographical areas in which the banks have exposures, the loan losses can be estimated for each

exposure. These are then added together to arrive at the figure for total loan losses. To estimate the loan losses (LL) we need to know about the banks' exposures (E), the probability of default (PD) and the expected level of loss given default (LGD). The expected loan losses (EL) for borrower category *i* and region *j* are calculated as follows:

$$EL_{ij} = E_{ij} \cdot PD_{ij} \cdot LGD_{ij}$$

The information on the credit portfolios is based on public data from the banks' interim reports for the third quarter 2009. In order to estimate credit volumes and the probability of default for each region and category of borrower, the Riksbank uses internally-developed models based on the Riksbank's and Consensus Forecast's assessments of the development of several central macroeconomic variables in the respective countries (see Table 3:3). In a second stage, a qualitative and quantitative assessment of the consistency between regions and borrower categories in the model-based forecasts is then made. The level of loss given default is based on data from Moody's KMV and the Riksbank's estimates. In the Riksbank's calculations for the four major banks, the weighted LGD for the banks' total portfolio (household and corporate) is 45 per cent.

**Table 3:3 Macroeconomic variables per country, 2009–2011.**  
Per cent

	Industrial production			CPI			3 month interest		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Sweden	-9.6	8.5	4.4	-0.7	1.6	3.4	0.2	0.5	2.4
Denmark	-14.9	2.2	9.5	1.3	1.5	1.2	1.5	0.5	2.0
Norway	-7.4	2.0	6.8	2.1	1.7	3.7	2.1	2.9	4.9
Finland	-19.7	3.3	9.3	0.6	1.2	1.7	1.2	0.5	2.0
Germany	-16.3	4.2	11.3	0.3	0.9	2.8	0.9	1.5	3.4
UK	-10.2	1.8	6.9	2.0	2.0	2.0	0.8	1.4	1.4
Estonia	-26.7	-3.3	0.5	-0.5	-2.3	1.2	5.9	7.3	8.8
Latvia	-20.0	-5.8	0.5	3.2	-4.5	-2.5	11.1	11.6	13.3
Lithuania	-17.3	-8.5	0.5	3.5	-2.0	2.2	7.7	8.5	10.0

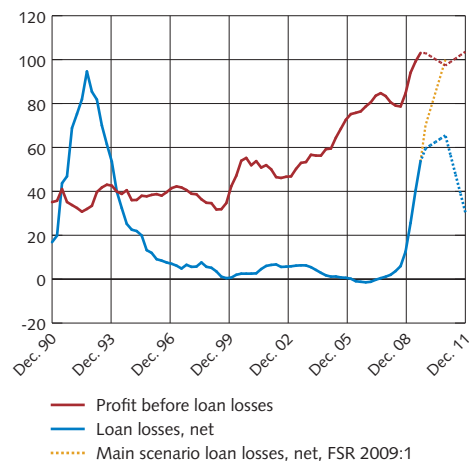
Note. Three-month interest rates in domestic currencies in the Baltic countries are less important as most of these loans are in euro.

Sources: Consensus Forecasts and the Riksbank

It is important to emphasise that there is a high level of uncertainty in the calculation of the loan losses. In addition, the banks have a relatively high degree of freedom in their bookkeeping to spread the losses over time, which is not reflected in the calculations. This means that even a forecast that is based on perfect information regarding a bank's exposures, probability of default and loss given default, will not always correspond to the loan losses presented in the bookkeeping.

**All business sectors and geographical areas are affected by the global recession, but credit quality is affected to varying degrees.** The largest losses, in relation to lending, are assumed to come from the banks' exposures in the Baltic countries. This is primarily due to the weak macroeconomic development in these countries (see Table 3:3). The number of bankruptcies is expected to increase on a broad front among companies on the developed markets where the Swedish banks are

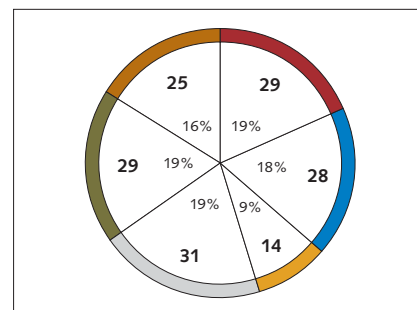
**Chart 3:8. Earnings before loan losses and loan losses (net) in the major banks**  
Summed up over four quarters, SEK billion, fixed prices, 30 September 2009



Note. Estimates for earnings before loan losses according to SME Direkt, September 2009

Sources: Bank reports, SME Direkt and the Riksbank

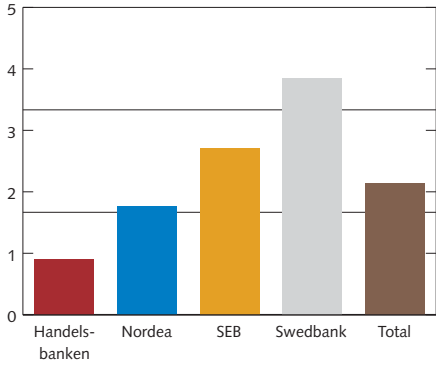
**Chart 3:9. Distribution of loan losses per region in the period Q4 2009 to 2011 in the Riksbank's main scenario**  
SEK billion and per cent



- Sweden
- Nordic countries excluding Sweden
- Estonia
- Latvia
- Lithuania
- Other countries

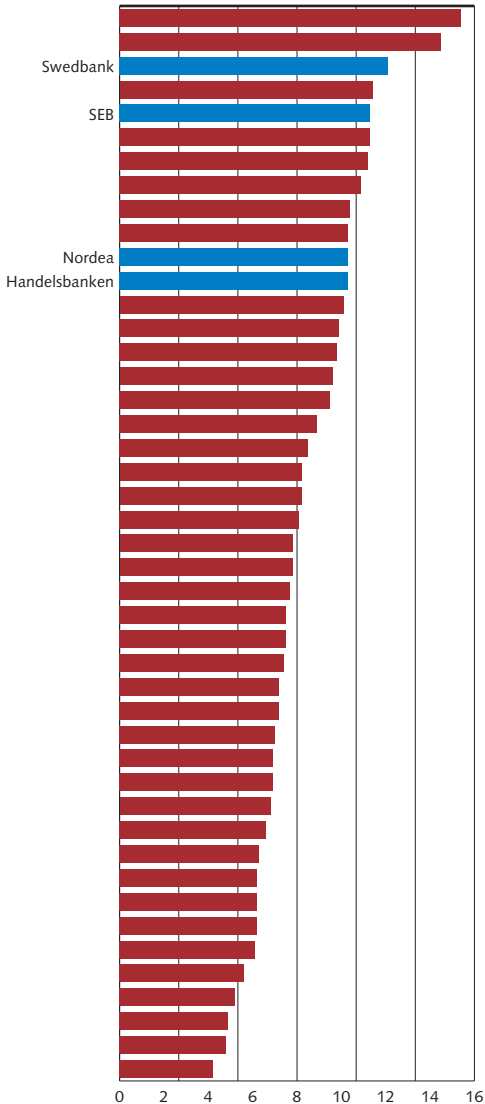
Source: The Riksbank

**Chart 3:10. Total loan losses in the Riksbank's main scenario in relation to lending**  
Per cent



Note. The banks' loan losses 2009 to 2011 in relation to the lending opening balance 2009.  
Sources: Bank reports and the Riksbank.

**Chart 3:11. The core Tier 1 capital ratios of European banks, June 2009**  
Per cent



Note. Estimated and observed core Tier 1 capital ratios in accordance with Basel II, including pending and conducted capital raises after Q2 2009. The banks are not named due to integrity reasons.  
Source: Nomura

active. Cyclically-sensitive sectors such as transport and construction are expected to be even more exposed (see Chapter 2). The losses stemming from loans to commercial properties in Sweden are expected to be lower than during the crisis of the 1990s. This is mainly due to the generally low interest rates. Nevertheless, the decline in economic activity will lead to increasing losses from lending to commercial property companies. The loans losses are expected to be lowest with regard to loans to Nordic households with housing as collateral. This is partly because the social safety nets are relatively well-developed in the Nordic region, while a household will incur long-lasting judicial consequences if it defaults on its mortgage payments.

**According to the Riksbank's main scenario, the loan losses of the four major banks are expected to total SEK 155 billion in the period 2009-2011.** The loan losses are expected to be SEK 60 billion in 2009, SEK 65 billion in 2010 and SEK 30 billion in 2011 (see Chart 3:8). Slightly less than 50 per cent of the loan losses stem from the banks' operations in the Baltic countries and approximately a third stem from operations in Sweden and the other Nordic countries (see Chart 3:9).

**Table 3:4. The loan losses of the major Swedish banks in 2009, 2010 and 2011 in the main scenario and lending in total and in the Baltic countries**  
SEK billion

	Loan losses					Lending to the public and credit institutions excl. repos, end of Q3, 2009
	2009	(Of which Q4 2009)	2010	2011	Total	
	60	(16)	65	30	155	6 870
Of which Estonia	4.4	(1.4)	5.3	3.8	13.5	142
Latvia	12.2	(2.6)	13.5	5.5	31.2	122
Lithuania	10.4	(3.4)	14.3	4.5	29.2	136

Source: The Riksbank

**The figure for loan losses has been adjusted downwards compared to the Riksbank's assessment in June** (see Chart 3:8). In the previous main scenario in June, which extended over 2009 and 2010, loan losses totalled SEK 170 billion. The total of the realised loan losses during the first three quarters of 2009, the loan losses to which the current main scenario gives rise for the fourth quarter of 2009 and the whole year 2010 adds up to SEK 125 billion. This downward revision is partly because economic prospects have improved in relation to the previous report, and partly because loan losses in the first three quarters of this year have been lower than expected. It is primarily in Sweden that loan losses are assessed to be lower. In the Baltic countries, on the other hand, loan losses are expected to increase slightly more than in the assessment in June as a result of the continuing very weak development of the economies.

CAPITAL

**In an international perspective the major Swedish banks are well-capitalised.** This is evident in chart 3:11, which compares the Tier 1 core



capital ratios of European banks. The core Tier 1 capital ratios of the Swedish banks are among the highest in Europe and are well above the minimum statutory level. This high level of capitalisation increases access to market funding and enables a more rapid return to normal funding conditions for the banks. This is particularly important to the major Swedish banks as they are largely dependent on market funding. The Swedish banks are well capitalised even when considering the loan losses in the Riksbank's main scenario.

**All of the Swedish banks have acted to increase their Tier 1 capital in relation to risk-weighted assets.** In contrast to the case of banks in other countries, this has been done without government intervention.<sup>123</sup> Since September 2008, total Tier 1 capital has increased by over 30 per cent at the same time as the risk-weighted assets, following full implementation of Basel II, have fallen by eight per cent. Table 3:5 shows that raised share capital, which is one of the forms of capital that has the highest quality, accounts for the largest contribution to the increase in Tier 1 capital ratios. Tier 1 hybrids, which is a hybrid between equity and debt, has also increased the ratio. Reduced and cancelled dividends, as well as profits in the reporting period, have also helped to increase Tier 1 capital. A reduction in risk-weighted assets has also contributed to an increase in the Tier 1 capital ratio for the banks.

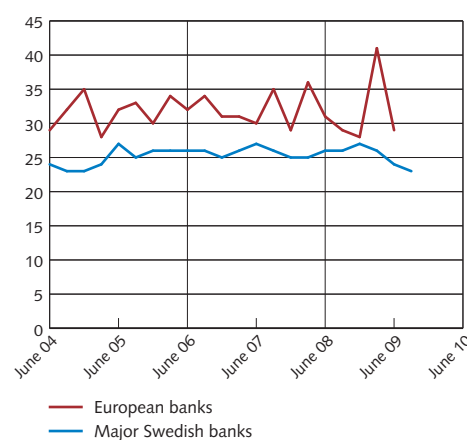
**Table 3:5. Change in Tier 1 capital ratios**  
Per cent

	Swedbank	Nordea	SEB	Handelsbanken
Tier 1 capital ratio September 2008	8.7	7.9	9.9	10.0
Share capital in new issues*	4.1	1.3	1.9	0.0
Hybrid capital	0.1	0.4	0.2	0.8
Reduced/cancelled dividends 2008	0.4	0.3	0.4	0.1
Profits	-0.7	1.0	0.7	1.0
Change in risk-weighted assets	1.2	1.1	0.4	1.6
Total change in Tier 1 capital ratio	5.1	4.1	3.6	3.5
Tier 1 capital ratio September 2009	13.8	12.0	13.5	13.5
Tier 1 capital ratio September 2009, Transitional regulations*	10.7	10.5	12.5	9.1

Note. \*Including Swedbank's rights issue of SEK 15 billion in October 2009.  
Source: Bank reports and the Riksbank

**Apart from ensuring access to market funding, the increase in capitalisation could be because the banks are adapting to future regulations on capital adequacy.** For some time now, the ratio between the banks' assets and their equity has increased both internationally and in Sweden. This indicates that risk taking has increased at the banks. One of the effects of the financial crisis, during which the importance of adequate capital buffers has become very clear, is that international discussions are now underway about changing and complementing the regulations governing capital adequacy. Among other things, these discussions cover the need to increase the current risk-weighted capital

**Chart 3:12. Assets in relation to equity**  
Per cent



Note. European banks include: ABN Amro, Banco Santander, Barclays, BNP Paribas, Commerzbank, Credit Suisse, Deutsche Bank, HSBC, UBS and Unicredit.

Source: Bank reports and the Riksbank.

123 The Swedish State, as an existing shareholder, subscribed for its pro-rata share of Nordea's new issue.

## How the banks have handled problem loans in the Baltic countries

**P**revious experience, not least from the Swedish bank crisis of the 1990s, shows that the effective handling of banks' problem loans can save considerable sums and also make the work of the banks easier. An estimate based on the Swedish banks' current loan undertakings in the Baltic countries indicates that the total sum and the number of problem loans over a period of three years may be very high.<sup>124</sup> During the autumn of 2009, the Riksbank and Finansinspektionen have investigated how the Swedish banks in the Baltic countries are handling the rapidly-increasing stock of problem loans and the collateral associated with them. Handling is in line with good international practice and the banks have a realistic view of the size of their problem loans.

The solutions adopted in the various loan cases vary of course, depending on what the bank concerned believes will lead to the best financial outcome for the bank. In many cases, the management of loans and collateral has been transferred to a specialised department within the bank. There are also cases of transfers to an Asset management Corporation (AMC).

*The handling of problem loans in a special unit within the bank or in an AMC*

When the volume of problem loans exceeds a certain level it is expedient for the bank to separate these loans from the regular organisation and place them in special units within the bank or in a separate subsidiary, an AMC. This achieves several aims:

- The management of the bank can concentrate on navigating the bank out of the current crisis instead of devoting its time to managing a large number of individual problem loans.
- The bank can employ experts of a type not normally found at the bank to handle the

problem assets, such as property experts, corporate trouble-shooters and so on.

- The transparency of the bank's balance sheet increases as impaired assets are identified and separated. This also facilitates the external valuation of the bank.

It is important that the assets are valued at realistic, conservative prices when they are transferred, irrespective of whether the transfer takes place within the bank or to an AMC. Unrealistically high prices conceal the actual losses. It is also important that the organisation of the management of the problem loans closely follows the structure of the assets. For example, there may be different units for the management of property holdings, corporate loans and loans to private customers.

The most important thing in the management of problem loans is to maximise recovery or minimise the losses if the market continues to be unfavourable. This is done in different stages. First, a division is made between those loans where recovery is expected to be higher if the debt is retained and restructured and those where the utilisation of the collateral can be expected to provide a higher degree of recovery. This is followed by various operations that aim to increase value, such as renovating properties and restructuring companies. Then it is a case of waiting for the best time to sell within the statutory requirements.

*Conclusion of the review of the Swedish banks*

By and large, the banks have chosen similar ways of organising the management of the problem assets that stem from their operations in the Baltic countries, although the degree of centralisation differs somewhat. Many problem loans are handled locally, but large or more complex loans are dealt with in so-called workout units in Stockholm. The local organisation has special units for renegotiating

<sup>124</sup> The calculation of the sum is performed in this Report in the section "How large will the loan losses of the Swedish banks be?" and in the stress test.

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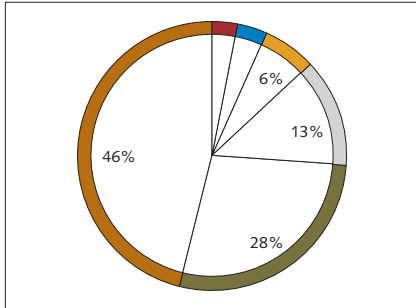
loans (per category of loan), calling in collateral and managing properties claimed as collateral. Personnel with the special expertise required have been employed in these units.

In addition to the central workout units there are also AMCs in Stockholm that manage called-in collateral in the form of property. In addition, there are functions in Stockholm for coordinating operations to ensure, for example, that similar cases in different countries are dealt with in the same way. The Riksbank's assessment is that the measures taken by the banks' to strengthen their organisations for managing impaired loans are in line with sound international practice. The banks also have a realistic view of the potential magnitude of the proportion of distressed loans that are expected to reach their peak in 2010. The banks'

provisions for identified problem loans are at a level that has been usual in the case of previous bank crises. However, the Riksbank doubts whether this will be enough given the severe crisis that prevails in these countries.

There are several factors that make the management of problem loans more difficult for the Swedish banks: The legislation in the Baltic countries regarding problem loans and the calling-in of collateral is to some extent incomplete and untried. The courts are at present overloaded, partly because of the large volume of problem cases and partly because of the often time-consuming procedures that a bank must follow when it wants to take charge of the collateral for a loan, for example by taking over a property.

**Chart 3:13. The banks' sources of financing, September 2009**  
Per cent

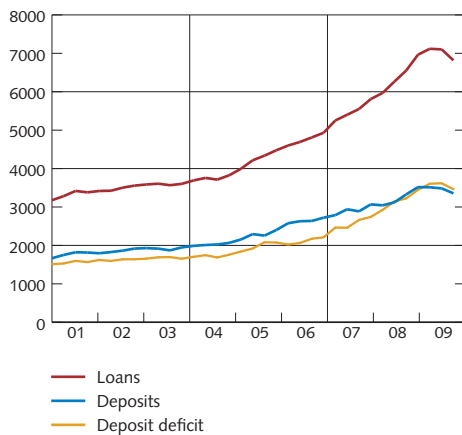


- Credit from the Riksbank, 3%
- Government-guaranteed borrowing via the Swedish National Debt Office, 4%
- Interbank, net
- Covered bonds in SEK
- Other debt securities issued
- Deposits

Note. Banks' funding sources amount to approximately SEK 7,300 billion.

Sources: Bank reports and the Riksbank.

**Chart 3:14. The banks' deposits and lending**  
SEK billion



Note. Deposit deficit = lending – deposits.

Sources: Bank reports and the Riksbank.

adequacy requirements but also to introduce a non risk-weighted capital requirement (a leverage ratio) that is intended to act as a floor to avoid the level of indebtedness becoming too high (see the box “The international regulation agenda”). It is likely that such a regulation will be introduced, although we do not yet know exactly how it will be designed. It can be seen in Chart 3:12, however, that the leverage in the Swedish banks has begun to decline in pace with the increase in their capital.

## Funding – liquidity risk

One of the most important functions of the banking system is to convert short-term deposits and borrowing to long-term lending. A large part of the banks' liabilities, this is to say the funding of the banks' operations, is to be regarded as liquid. The banks' assets in the form of lending are, on the other hand, to a large part illiquid. The banks thus have a liquidity risk to manage. The reason for this is that the banks can not be certain about how they will be able to fund their operations in the future, and it may also be difficult for them to convert their assets into liquidity quickly.

**Half of the banks' funding consists of market funding and half of deposits from the public** (see Chart 3:13). In total, the banks' funding amounts to approximately SEK 7,300 billion. Market funding consists primarily of issued securities where bonds account for the long-term market funding and certificates for the short-term funding. Funding on the interbank market, which is primarily used to balance liquidity, is also a part of the short-term market funding. In addition, loans from the Riksbank and other central banks, together with funding backed by government guarantees, have replaced parts of normal funding.

**It has become easier for the Swedish banks to find funding on the financial markets, but conditions are still strained.** The fact that they are highly dependent on the market thus continues to be a problem for the Swedish banks. Although deposits from the public have increased, lending has increased even more. The difference between deposits and lending, the so-called deposit deficit, has thus increased (see Chart 3:14). The deposit deficit shows the proportion of a bank's lending that cannot be funded by deposits and accordingly has to be funded in some other way. At the end of the third quarter 2009, the deposit deficit amounted to SEK 3 500 billion.

**The improvement in access to market funding has led the banks to begin borrowing at longer maturities than previously.** Since the previous Financial Stability Report, the appetite for risk has returned to the market to a certain extent. The banks have thus been able to find funding at longer maturities at lower prices. The maturity of the banks' recently issued securities have therefore increased. This means that the difference between when assets and liabilities mature has decreased, as has the liquidity risk. As the banks are so dependent on market funding, their average funding costs increase when the maturity of this funding

increases. However, even though the situation on the financial markets has improved, the global banking system is still dependent on the extraordinary measures taken by the central banks and on the possibility to borrow under government guarantees.

**New liquidity regulations will be introduced in the wake of the financial crisis** (see the box “The international regulation agenda”). The new regulations will aim, among other things, to increase the quality of the banks’ liquidity reserves and to reduce dependence on too short-term funding. In order to adapt to the new regulations, a large part of the international banking system will need to increase the proportion of long-term funding on its balance sheets. As the banks will probably need to adapt at the around same time, the increased supply of bonds may drive up the costs for the banks’ funding. It is also a long process for a bank to extend the maturity structure of its funding, although this will decrease the banks’ liquidity risk. The regulation of liquidity is desirable for another reason. At present, there is no common approach to the definition of liquidity reserves. The banks’ report this differently in terms of both content and scope. This creates unnecessary uncertainty and the Riksbank therefore believes that the banks need to become more transparent in the reporting of the composition of their liquidity reserves. Other areas in which the banks need to increase transparency include the assumptions underlying the cash flow analyses and stress tests that are often presented in the banks’ publications. The banks’ reporting should also include a maturity structure for market funding that is presented per currency and intervals, as well as information on the composition of the security issues conducted during the reporting period.

**A substantial share of the banks’ market funding is in foreign currency.**

Under normal circumstances this is positive as it reduces dependence on an individual market. However, during the financial crisis it has become apparent that it is the foreign market funding that the Swedish banks have found it most difficult to renew. It has proved to be very difficult, and in some cases impossible, for the banks to issue abroad. This means that it has not been possible to renew many of the banks’ bonds and certificates that have fallen due for payment, although the possibility to renew funding has improved since the second quarter of 2009. The Riksbank and other central have also replaced parts of the currency borrowing that disappeared. Over the next 12 months, however, a further SEK 1,300 billion of the major banks’ issued securities in foreign currency will fall due, which entails a significant risk for the banking sector. However, a large proportion of the foreign funding is being converted, or swapped, into Swedish kronor for lending to Swedish borrowers (see the box “Swapping covered bonds in euro to Swedish kronor – a decomposition of costs”).

## Swapping covered bonds in euro to Swedish kronor – a decomposition of costs

**T**he financial crisis has made plain the liquidity risks that can arise when an excessive proportion of banks' funding is obtained over the short term, at the same time as the banks' lending activities mostly are of a long-term nature. Another risk is the exchange rate risk arising when banks largely obtain funding on foreign securities markets, even though the greater part of their lending activities is conducted in Swedish kronor. As the majority of Swedish borrowers take out mortgages at variable interest rates, while the banks usually obtain funding on securities markets through loans at fixed annual interest rates, an interest rate risk also arises. In order to protect themselves against these three risks, the banks issue bonds with long maturities and utilise various derivative instruments, primarily interest rate swaps and cross currency swaps.<sup>125</sup> In conjunction with this, the banks bear the costs for the various risk premiums. These expenses have risen steeply during the course of the financial crisis. For example, risk premiums increased by a total of approximately 150 points between the spring of 2008 and the spring of 2009. An explanation of this large increase in the cost of various risk premiums during the crisis is presented below.

### *Three risks in banks' funding*

Swedish borrowers often borrow with three-month variable interest rates. In addition to interest, they also have to pay a margin to the bank to cover the bank's risks and profits on lending. If we assume that this margin amounts to 0.5 per cent, the bank could theoretically borrow on the interbank market at a three-month variable interest rate and thus earn approximately 0.5 per cent. Such a strategy would expose the bank to a major *liquidity risk* when borrowing at a three-month rate, as it is more likely that the loan to the customer would have a duration of over three months, most

likely of several years. Consequently, in order to ensure that the bank is able to lend for several years, it would be insufficient to obtain funding for three months. Instead, the bank needs to obtain funding for longer maturities.

In order to obtain funding for longer maturities, banks often choose to issue bonds on the foreign securities market. The explanation for this is that these markets have historically been more liquid and the banks wish to diversify their funding. The banks wish to convert a large portion of foreign borrowing into Swedish kronor in order to be able to lend Swedish kronor to Swedish borrowers. The banks thus become exposed to *interest rate and exchange rate risk*.

The following example illustrates how a bank wishing to lend Swedish kronor to a client for five years with a three-month variable interest rate can secure long-term funding in Swedish kronor by borrowing on the euro market, without incurring any interest rate or exchange rate risk. In order to obtain funding in this manner, the bank enters into four agreements.<sup>126</sup>

### *Managing the banks' risks*

In the first stage, the bank issues a covered bond denominated in euro, with a maturity of five years and with a fixed annual interest rate (A1). This secures funding for the bank for five years. In the example, the bank pays an interest rate of four per cent. However, the bank will incur an interest rate risk, as it wishes to lend to a customer at a variable interest rate (E1), but is borrowing at a fixed interest rate (A1). Consequently, the bank enters into a five-year interest-rate swap, denominated in euro, in which it obtains a fixed interest rate of 2.7 per cent (B1) and pays a variable interest rate equivalent to the six-month reference rate 6M EURIBOR (B2). The bank's funding expense thus amounts to 6M EURIBOR plus the difference

<sup>125</sup> An interest rate swap is an agreement between two parties to exchange interest payments over a specific period of time. For example, one participant can choose to pay a fixed rate of interest in exchange for a variable rate. For interest rate swaps in Swedish kronor and euro, the convention is to state the variable interest rate as the current reference rate, STIBOR or EURIBOR, respectively. In a cross currency swap, two currencies are exchanged at the start of the swap and then exchanged back again on the maturity date. In addition, interest payments in the respective currencies are made during the duration of the swap. A cross currency swap is built up of a series of shorter foreign exchange forwards.

<sup>126</sup> In reality, it is likely that the loan to the customer will be of longer maturity than five years. In the example, however, the loan is assumed to mature after five years.

between the fixed interest rate of the bond (A1) and the fixed interest rate of the interest rate swap (B1).<sup>127</sup> This difference is referred to as *spread over swap*.

The bank has obtained funding in euro (A1), but wishes to lend in Swedish kronor (E1). The bank could resolve this by exchanging euro for Swedish kronor on the spot market. However, as it must repay the investor of the bond in euro in five years, such a course of action would expose it to a foreign exchange rate risk. The bank manages this exchange rate risk with the aid of a cross currency swap (C). The euro amount received by the bank from the issue of the covered bonds (A1) is lent out for five years in a cross currency swap (C1), in return for which the bank may borrow Swedish kronor (C2).<sup>128</sup> For this, the bank receives the three-month reference rate 3M EURIBOR (C1) and pays the three-month reference rate 3M STIBOR plus a spread (C2). This spread is referred to as a *cross currency basis spread* and indicates, in a slightly simplified form, how much more expensive it is to raise a loan in euro and then exchange, or swap, it for Swedish kronor, as compared with simply borrowing in Swedish kronor.

The bank has now ensured that it has no interest rate risk in Swedish kronor, as the

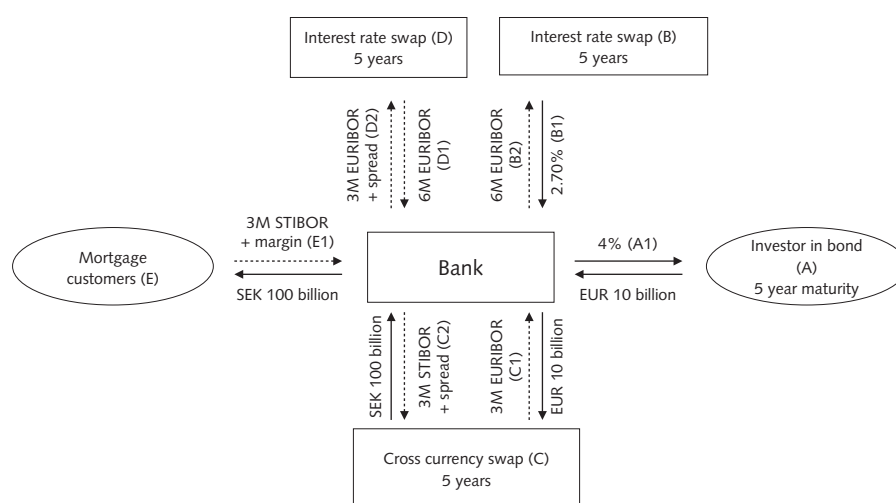
interest payments it receives from its mortgage customers are based on 3M STIBOR (E1), which correspond to an equivalent STIBOR outflow in the cross currency swap (C2). However, the bank still has an interest-rate risk in euro that it must manage. This is because the inflow of the cross currency swap (C1) takes place at 3M EURIBOR, while the outflow of the interest rate swap takes place at 6M EURIBOR (B2). These flows thus do not match one another in maturity, which the bank handles by entering a further interest rate swap (D) with a maturity of five years. In this swap, the bank receives 6M EURIBOR (D1) and pays 3M EURIBOR plus a spread (D2).<sup>129</sup> This spread is referred to as a *money market basis spread*.

Through these transactions, the bank has now secured funding for five years, eliminated all interest rate risk and protected itself against losses from the exchange rate risk arising from the bank's decision to lend in Swedish kronor and obtain funding through a bond denominated in euro.

*The cost of managing the banks' risks has increased*

The cost of making these transactions has increased sharply during the course of the

**Illustration B1. Issue of covered bond in euro, swapped for Swedish kronor**



Note. Dashed lines correspond to variable interest payments

Source: The Riksbank

<sup>127</sup> 4 per cent – 2.7 per cent + 6M EURIBOR

<sup>128</sup> This transaction takes place at the prevailing EUR/SEK exchange rate, which, in this example, is assumed to be 10.

<sup>129</sup> When the bank enters interest rate swap B, the market convention in euro is that the fixed interest rate in the interest rate swap is exchanged for 6M EURIBOR. If the swap had instead been made with 3M EURIBOR as reference rate, the bank would have eliminated all interest rate risk in euro, without needing to carry out interest rate swap D.

Table B2. Decomposition of costs for the bank

	Bank's actions	Price spring 2009	Price spring 2008
A	Pays	4.0%	4.5%
B1	Receives	2.7%	4.3%
B2	Pays	6 month EURIBOR	6 month EURIBOR
C1	Receives	3 month EURIBOR	3 month EURIBOR
C2	Pays	3 month STIBOR + 0,3%	3 month STIBOR
D1	Receives	6 month EURIBOR	6 month EURIBOR
D2	Pays	3 month EURIBOR + 0.1%	3 month EURIBOR
<b>Net cost</b>	<b>Pays</b>	<b>3 month STIBOR + 1.7%</b>	<b>3 month STIBOR + 0.2%</b>
<i>Of which spread over swap</i>	A-B1	1.3%	0.2%
<i>Of which cross currency basis spread</i>	C2	0.3%	0%
<i>Of which money market basis spread</i>	D2	0.1%	0%

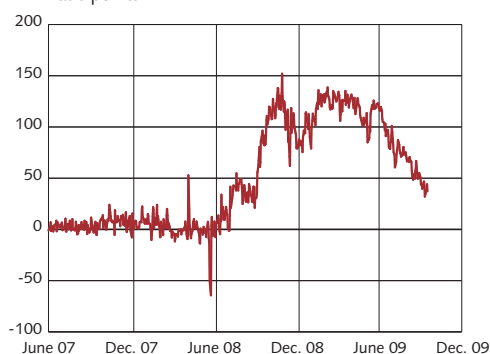
Note. The example is based on Swedish covered bonds in euro. The figures have been rounded off.  
Source: The Riksbank

present crisis (see Table B2). In the spring of 2008, the bank would have had to pay a net amount equivalent to 3M STIBOR plus a further 20 basis points for all transactions, while the equivalent cost amounted to 3M STIBOR plus 170 basis points in the spring of 2009. These 150 basis points in increased costs can be divided among *spread over swap*, *cross currency spread* and *money market basis spread*. An explanation of why these three spreads have increased so sharply is presented below.

#### Spread over swap

During the crisis, it has been difficult for

Chart B15. Spread over swap for covered bonds in EUR, five years  
Basis points



Note. The diagram illustrates German covered bonds denominated in euro as there is no corresponding data (curve) for Swedish covered bonds denominated in euro. However, the example presented in Table B2 is based on Swedish covered bonds denominated in euro.

Source: Reuters Ecowin and the Riksbank

investors to assess banks' credit risks.

Consequently, they have chosen to make short-term investments, thus impairing the banks' chances of securing long-term financing. A large portion of funding has thereby been obtained over shorter maturities. However, the banks also have a need to secure long-term funding, for which they are consequently prepared to pay extra. Spread over swap is an expression of the premium that banks are prepared to pay in order to receive funding in a five-year bond, instead of obtaining funding every six months on the interbank market. This spread is also a measurement of the extra compensation demanded by investors for the increased credit risk entailed by investing in a bond for five years, as opposed to investing in the interbank market every six months. The increased spread is thus a function of both liquidity and credit risks, which have both been highly evident during the crisis (see Chart B15).

#### Cross currency basis spread

In order to fund a loan in Swedish kronor, the banks may issue bonds in foreign currency and then exchange or swap these for Swedish kronor in a cross currency swap (see above). In such a swap, the Swedish bank borrows Swedish kronor (paying the reference rate STIBOR) and lends euro (receiving the reference rate EURIBOR). The increase in the basis spread in STIBOR may be explained by the high demand for Swedish kronor in exchange for euro in the cross currency swap. However, as the issued volume of covered



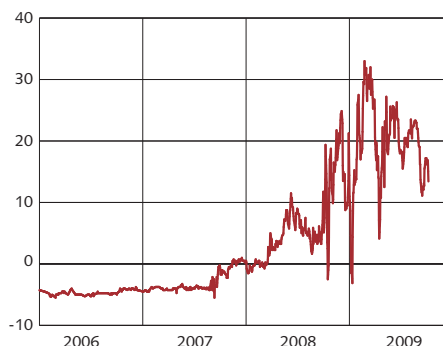
bonds in euro has not been extensive during the crisis, it is more likely that the increase in the spread can be explained by a decrease in risk appetite. Clearly, this has primarily impacted less liquid currencies such as the Swedish kronor. Consequently, banks receiving STIBOR have demanded higher spread as compensation for the increased risk involved in trading in Swedish kronor. Chart B16 illustrates the increase in the cross currency basis spread during the crisis.

#### Money market basis spread

EURIBOR is the interest rate for an unsecured investment on the interbank market. As an investor lending a nominal amount to a borrower can, in principle, lose everything, EURIBOR is associated with credit risk. Consequently, it will be more attractive for an investor to invest for three months and then make a new investment of the same maturity, as opposed to investing with one counterparty for six months. The fact that 6M EURIBOR is higher than 3M EURIBOR can thus, to a certain extent, be explained by credit risk.<sup>130</sup> An interest rate swap entails far less credit risk than an investment in EURIBOR, but, despite this, the flows in the swap are based on EURIBOR.<sup>131</sup> This creates problems for which adjustments must be made in the swap.

A bank receiving 6M EURIBOR and paying 3M EURIBOR in an interest rate swap will namely receive an excessively high interest rate flow, as 6M EURIBOR includes a premium for a credit risk (and liquidity risk) that is not included in the interest rate swap. The interest differential between 6M EURIBOR and 3M EURIBOR that can be explained by this risk premium is therefore added to 3M EURIBOR. This provides compensation to the participant who would otherwise have had to receive an excessively low interest rate flow (3M EURIBOR without addition). During the crisis, the risk premium has clearly increased, due to the increase of credit and liquidity risks between different durations,

**Chart B16. EUR/SEK cross currency basis spread, five years**  
Basis points



Source: Bloomberg

**Chart B17. Money market basis spread (between 6M EURIBOR and 3M EURIBOR), five years**  
Basis points



Source: Bloomberg

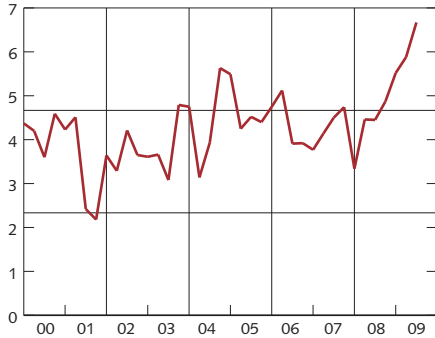
which means that the adjustment to be made between three and six months in the interest rate swap also increases. Chart B17 illustrates the increase in the money market basis spread during the crisis.

During the financial crisis, it has thus become more expensive for banks to obtain funding of longer duration in a covered bond denominated in euro, compared with obtaining short-term funding on the Swedish market at a three-month interbank rate. Above all, it is the cost of insuring against liquidity risk that has increased, although other costs associated with interest rate and exchange rate risks have also increased during the crisis. A major part of the increased cost has been transferred to banks' customers. This means that the margin added by the bank to the reference rate 3M STIBOR (see E1 in Illustration B1) has increased during the crisis.

<sup>130</sup> A part of the slope of the curve can also be explained by liquidity risk, as demand for long-term funding has exceeded supply since the start of the financial crisis in the summer of 2007.

<sup>131</sup> No nominal flows are exchanged in an interest rate swap. Instead, only interest rate flows constructed upon a fictive underlying notional amount are exchanged. This means that the flows changing owner in an interest rate swap are much smaller, in comparison with the interbank market, which also explains why the credit risk of an interest rate swap is lower.

**Chart 3:15. The major bank with the lowest Tier 1 capital ratio after another Swedish major bank defaulted on payments**  
Per cent



Note. The major bank with the lowest Tier 1 capital ratio is not necessarily the same bank on every occasion.

Source: The Riksbank

## Contagion risk

The major banks' central role in the financial system means that they have considerable exposures to each other and to individual companies, so-called counterparty exposures. If a bank or a company experiences problems and suspends payments, this can therefore lead to significant losses for the other banks. The risk that this will happen is referred to as contagion risk, and is, accordingly defined as the risk that a problem in one institution will spread to other institutions through counterparty exposures. By limiting their counterparty exposures and requiring collateral for their loans, the banks can limit the direct contagion risk.

However, the contagion risk can also be indirect. As the operations of the banks are similar and they are largely exposed to the same types of macroeconomic risk, information that a bank is experiencing problems may lead to concern on the market that other banks also have problems. This may, for example, make investors less willing to provide funding, which could lead to liquidity problems and, in the longer term, also to funding problems for the other banks.

Both the direct and indirect contagion risks can in the worst case lead to several banks experiencing problems at the same time, which may have an impact on the functioning of the financial system as a whole.

**The Riksbank's tests show that the direct contagion risk in the Swedish banking system has declined.** Compared to the situation at the time of the previous Financial Stability Report, the banks' counterparty exposures are either at the same level or a slightly lower level both in relation to the total value of the banks' major exposures and to Tier 1 capital. In an historical perspective, the level of counterparty exposures to other banks is low, above all because overnight loans between the banks are still limited. At the same time, the banks have strengthened their Tier 1 capital. These factors mean that the direct contagion risk is lower than previously.<sup>132</sup> During the previous six months, no bank had an exposure that, given the assumptions in the Riksbank's tests, could lead to the Tier 1 capital ratio falling below the statutory requirement for Tier 1 capital of four per cent in the event that another Swedish bank suspended its payments (see Chart 3:15). Nor did the loss of the largest exposure to a counterparty other than a major Swedish bank lead to the occurrence of any direct contagion effects in the Riksbank's test. The tests are based on data on the major banks' 15 largest counterparty exposures, which the Riksbank compiles quarterly.<sup>133</sup> In order to assess the risk of contagion effects, the Riksbank calculates what the effect would be on the respective major banks' Tier 1 capital if the bank lost one or several of its large exposures.

<sup>132</sup> In the Riksbank's test it is assumed that 75 per cent of the banks' exposures to defaulting institutions or companies are lost and that 25 per cent can be recovered. The test corresponds to a situation in which a participant, completely without warning, suspends all its payments with immediate effect. Possible recovery is also assumed to be relatively limited. The resulting Tier 1 capital ratio should therefore be seen as a stress test outcome.

<sup>133</sup> For a detailed review of the Riksbank's counterparty data, see the box "The Riksbank's counterparty data" in Financial Stability Report 2008:2.

**The Riksbank's assessment is that the indirect contagion risk has declined somewhat compared to the situation at the time of the previous Financial Stability Report, but that it is still at a high level.**

This is explained by the fact that confidence on the financial markets has recovered somewhat and that many banks have strengthened their capital. Confidence on the financial markets is, however, not fully restored and uncertainty about developments in the period ahead remains. There is therefore a risk that an isolated negative event that affects one Swedish bank will also have negative consequences for the other Swedish banks, even though the actual exposures between the banks are not larger than that the banks could cope with losing them. Such an event could, for example, lead to other Swedish banks also finding it difficult to fund their operations on the market.

### Stress test of the banks' resilience

The Riksbank regularly carries out stress tests to assess how less probable, but possible, negative events could affect the banks' resilience. For this Report, as in the stress test in the previous Report, the Riksbank has tested how the major Swedish banks would be affected if the development of the global economy proves to be much weaker than assumed in the main scenario. Although there are now signs that the economy is slowly beginning to recover, there is still great uncertainty about whether this is the start of a sustained improvement. Also, the financial system is still vulnerable to individual shocks. There is therefore a risk that a negative event could trigger new problems on the financial markets, which in turn could lead to a weaker development of the real economy and a worse situation for the banks than presented in the Riksbank's main scenario. Links, in the form of both financial links and trading links, mean that problems can quickly spread to other sectors and countries than those that were originally affected.

The scenario for the current stress test runs over a period of just over two years, from the beginning of the fourth quarter 2009 to the end of 2011. In the scenario, it is assumed that the upturn loses impetus. Instead, the development of production is zero or slightly negative in 2010 and 2011. The scenario thus reflects a prolonged recession with two troughs, a so-called double-dip recession. During the scenario, employment is also expected to fall more than in the Riksbank's current forecast, and property prices are expected to fall substantially. For the banks, this means that the credit quality in their loan portfolios deteriorates both in Sweden and abroad. In the test, it is also assumed that macroeconomic developments will have a greater impact on the loan losses than in the main scenario. The weak development will also have a negative impact on the earnings of the major banks. With regard to the major banks' geographical markets, it is assumed that the following occurs:

- In Sweden and the other Nordic countries there is a major decline in credit quality, which leads to an increase of loan losses in relation to lending (the loan-loss level). The commercial property sector and the corporate sector are hit particularly hard, resulting in an increase in the number of bankruptcies. Lending to households also contribute to the increase in the loan-loss level, mainly because of the increase in the number of defaults on consumer credits. Mortgage losses also increase, but not to the same extent as for other parts of the banks' loan portfolios.
- In the Baltic countries, credit quality continues to decline. The relative decline in credit quality compared to the main scenario is, however, less in these countries than in Sweden and the other Nordic countries as the crisis has already hit hard in these countries.
- In Germany and the UK, as in most other countries, development follows the same pattern as in Sweden and the other Nordic countries, with substantially higher loan losses than in the main scenario throughout the period. The development in the rest of Eastern Europe, on the other hand, will be more similar to that in the Baltic countries. In this region too, it is assumed that the relative weakening of the economy compared to the main scenario will not be as great as in other countries as the crisis also in many of the Eastern European countries is already very extensive. The average loan-loss level per year in the banks' remaining lending is 3.2 per cent, but varies from country to country and from year to year (see table 3:6 for a presentation of the loan losses in the stress test).

**Table 3.6. Loan loss levels per year in the stress test for the major banks**  
Per cent of total lending to the public and credit institutions in the respective sectors or countries

Type of exposure	2009 Q4	2010	2011
Sweden	0.9	1.0	0.6
Households	0.4	0.4	0.4
Non-financial companies	1.6	1.8	1.0
Financial companies	1.5	1.7	0.9
Property companies	1.5	1.7	0.9
Nordic countries excluding Sweden	1.6	1.8	0.6
Total for Baltic countries	12.2	13.6	9.7
Estonia	8.2	9.1	6.4
Latvia	14.6	16.2	12.0
Lithuania	14.3	15.9	11.4
Germany	1.6	1.8	0.6
UK	2.3	2.6	0.3
Other countries	3.2	3.5	2.7
Total	1.9	2.2	1.1

Note: The loan loss levels in the table are the loans losses in the respective regions or sectors in relation to lending at the beginning of the period to these regions or sectors. For Q4 2009, the annualised level is given. In the stress test, the same sector division as used in Sweden has been used for Norway, Finland and Denmark. For the Baltic countries, a division has been made between lending to companies and to households. The category property companies also includes apartment buildings and tenant-owner associations.

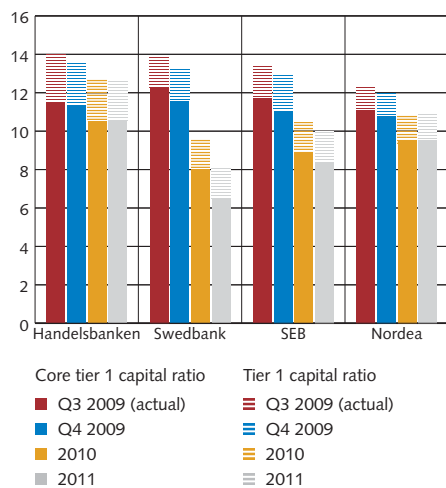
Source: The Riksbank

The Riksbank's stress test is based on public data on lending and capital of the major banks as per the end of the third quarter 2009. The banks' loan losses are calculated on the basis of this data and assumptions about the development of credit quality in various sectors and geographical areas. In order to calculate the banks' Tier 1 capital ratio at the end of the stress scenario the following assumptions are made:

- Profits before loan losses are 85 per cent of the market participants' average forecast for the respective major banks in 2009, 2010 and 2011.<sup>134</sup>
- No dividends are paid to the shareholders during 2010. On the other hand, an allocation is made for dividends in 2010 and 2011 equivalent to 40 per cent of net profits in the event that a bank has a positive net income.
- The banks are passive in the sense that they do not actively reduce their risk-weighted assets or acquire capital injections.
- Calculated loan losses are deducted from risk-weighted assets at the end of each year. Remaining risk-weighted assets increase by 5 per cent per year as the result of poorer credit quality.<sup>135</sup>
- Swedbank's new rights issue in September 2009 is added to the capital base that the bank reported at the end of the third quarter 2009.

<sup>134</sup> See SME Direkt (2009), October.

**Chart 3:16. The banks' Tier 1 and core Tier 1 capital, actual and in the stress test**  
Per cent



Note. The capital ratios have been adjusted upwards by the allocations for anticipated dividends to date in 2009.

Source: The Riksbank

The results of the Riksbank's stress test show that the loan losses of the four major banks total SEK 256 billion during the scenario (see Table 3:7). The largest share of the loan losses, 38 per cent, stems from the banks' operations in the Baltic countries. As a result of the loan losses, the Tier 1 capital ratios at each of the banks decrease, but still exceed the statutory minimum requirement of at least 4 per cent throughout the period (see Table 3:8 and Chart 3:16). Swedbank's and SEB's Tier 1 capital ratios experience a greater drop in comparison with those of Nordea and Handelsbanken. This is because they in comparison with the other two banks have a greater share of their lending in the Baltic countries where the stress level remains high throughout 2011. However, the Tier 1 capital of the four major banks to varying extent includes hybrid capital, which is a form of capital that is less able to absorb losses than equity. The banks' Tier 1 capital ratios are therefore not fully comparable. Handelsbanken is the bank that has the greatest proportion of hybrid capital in its Tier 1 capital while Nordea has the smallest. At its lowest, the banks' Tier 1 capital ratio is between 8.1 and 12.8 per cent, while the corresponding figure for the core Tier 1 capital ratio, that is the ratio for Tier 1 capital excluding hybrid capital, is between 6.8 and 10.5 per cent (see Table 3:8 and Chart 3:16).

**Table 3:7. Total loan losses and loan loss level for the major banks**  
SEK billion

		2009 Q4	2010	2011	Total	Lending to the public and credit institutions excluding repos, end of Q3 2009
Total		33	147	76	256	6 870
Of which	<i>Estonia</i>	3	13	8	24	142
	<i>Latvia</i>	4	19	11	34	122
	<i>Lithuania</i>	5	21	12	38	136

Source: The Riksbank

135 An important question is how the level of the banks' risk-weighted assets is affected when economic activity declines. In the stress test, the Riksbank assumes that the banks' risk-weighted assets increase by five per cent per year. The increase is assumed to be the same for all the banks. In reality, however, the effects of the migration of risk-weighted assets will differ from bank to bank as they use different calculation methods. For a more detailed discussion of how weaker economic activity affects the banks' risk-weighted assets see Financial Stability Report 2009:1.

**Table 3:8. Profits and capital ratios in the stress test for the four major banks**  
SEK billion and per cent

	Handelsbanken			Swedbank			SEB			Nordea		
	2009*	2010	2011	2009*	2010*	2011	2009*	2010	2011	2009*	2010	2011
Operating profit before loan losses	4	15	16	4	14	15	4	15	16	8	38	41
Loan losses	5	20	9	8	36	22	8	34	18	13	57	27
Operating profit after loan losses	-1	-5	7	-4	-22	-27	-3	-18	-2	-5	-19	14
Taxes	0	0	-2	0	0	0	0	0	0	0	0	-4
Profits after taxes and allocations for dividends	-1	-5	3	-4	-22	-7	-3	-18	-2	-5	-19	6
Tier 1 capital at start of year	87	87	82	84	77	61	101	98	78	214	209	290
Tier 1 capital at end of year	87	82	85	79	57	49	98	78	76	209	190	196
Risk-weighted assets at end of year	628	638	660	607	599	607	749	751	770	1 732	1 759	1 818
Tier 1 capital ratio at end of year, %												
Full Basel II	13.8	12.8	12.8	13.1	9.6	8.1	13.0	10.4	10.0	12.1	10.8	10.8
Transition rules	9.2	8.5	8.5	10.1	7.3	6.1	12.1	9.6	9.3	10.6	9.4	9.4
Core Tier 1 capital ratio at end of year (Full Basel II)	11.4	10.5	10.6	11.6	8.1	6.8	11.3	8.9	8.5	10.8	9.5	9.6

Note. \*The figures for 2009 relate to the fourth quarter only. Operating profits before loan losses thus refers to the forecast profits for the fourth quarter and "Tier 1 capital at the start of the period" is the amount reported at the end of the third quarter 2009. In the stress test the banks' loan losses are calculated on the basis of assumptions about the development of loan losses in different sectors and geographical areas. These loan losses are in the first instance deducted from the banks' operating profit. If the profits are not sufficient to cover all the loan losses, the Tier 1 capital is used to absorb the excess part of the loan loss. A decrease in capital in relation to risk-weighted assets entails weaker resilience. There is a statutory requirement that the banks must have a capital base equal to at least eight per cent of their risk-weighted assets, which given that the banks have enough supplementary capital can be translated into a Tier 1 capital requirement corresponding to at least four per cent of risk-weighted assets.

Source: Bank reports, SME Direkt and the Riksbank

**The stress test shows that the resilience of the banks has improved since the previous Financial Stability Report.** All of the four major banks perform better in this stress test than in the previous test in the sense that they have a higher Tier 1 capital ratio at the end of the final year of the stress test. This is largely due to the fact that since the spring of 2009 the banks have strengthened their Tier 1 capital by issuing new capital. They have also acted in other ways to strengthen their balance sheets and reduce their risk-weighted assets, which has helped to give them a higher initial Tier 1 capital ratio than at the time of the previous stress test. In addition, the current stress test relates to a brighter main scenario compared to the one in the previous Report, which reduces the figure for the banks' loan losses in each individual year.

**There is a risk, however, that considerable loan losses will make it more difficult for the banks to obtain market funding.** Even though the banks have sufficient capital to absorb the loan losses in the stress test without falling below the capital adequacy requirements, this does not necessarily mean that the banks would be unaffected if the stress scenario was realised. Firstly, the confidence of customers and investors in the banks would decline if the loan losses increased to the levels in the stress test.

Secondly, it is probable that the banks' credit ratings would come under pressure. These two factors could make it more difficult for the Swedish banks to obtain market funding.

### Summary of risks for the major Swedish banks

**The loan losses still constitute a major risk for the Swedish banks.**

This is mainly because there has been a general improvement in the macroeconomic outlook, which reduces the risk of major loan losses. But it is also because the banks have acted to strengthen their capital situation by, for example, issuing common stock and hybrid capital. In the main scenario, the major banks are expected to make loan losses totalling SEK 155 billion in the period 2009-2011. This will of course affect the profitability of the banks, but nevertheless means that they continue to be well capitalised. Uncertainty about the future development of the economy and its effects on the banks' loan losses is still high. The Riksbank has therefore tested the resilience of the banks to a considerably less-favourable scenario than the main scenario. Despite the much higher loan losses such a scenario entails, the banks exceed the statutory capital adequacy requirement by a broad margin. This outcome shows that the banks perform better in the stress test than in the previous Financial Stability Report. This is because the banks have improved their capital situation. At the same time, the current stress test relates to the brighter economic situation in the main scenario, which entails lower loan losses.

**The banks are finding it easier to fund their operations, but the measures taken by the central banks and the authorities are still decisive for the functioning of the financial markets.**

The financial markets are resting on fragile foundations and confidence can disappear quickly. If, for example, a scenario similar to the one in the stress test were to occur, the banks would probably experience problems in getting funding on the market and they would thus become more dependent on government support measures. This applies in particular to market funding in foreign currencies.



■ ARTICLE



## ■ Reducing the risk of future crises – a stronger macroprudential framework

### Regulation and supervision did not prevent the crisis

Hardly anyone foresaw the outbreak of a financial crisis of the extent that actually happened two years ago. Admittedly there was no lack of indications of increasing risks in the world economy: for a number of years before the outbreak of the crisis the build up of considerable global imbalances could be seen, with major and lasting savings surpluses in various parts of the world and deficits in others. The surpluses were invested in the global financial markets. The ample supply of capital available for investment in combination with the low interest rates for risk-free assets increased the demand for assets with a higher yield. Prices rose fast in many asset markets around the world and credit risk premiums fell to levels that seemed – and later proved to be – untenable in the long term.

So there was no lack of indication of a build-up of risk and many people warned of the tendencies towards exaggerated price increases, so-called bubbles, in certain asset markets. Despite this the indicators were not strong enough to convince a sufficient number of people of the need for counter-measures. Above all, it seems that there was no clear, overall picture of the global consequences if any of these bubbles burst. In addition, it has become far too difficult to survey the financial sector with its large, complex institutions with operations and commitments all over the world. And in the complicated web of financial instruments and artificial intermediaries that had evolved no one in the end knew where the risks were.

But even if there had been a better overall picture it is doubtful if the counter-measures available would have been effective. A general conclusion from the crisis is rather that the regulation and supervision that existed would not have been adequate to prevent either exaggerated risk taking in upturns or destructive herd behaviour in downturns. In the international debate there has therefore been increasing talk of strengthening "the macroprudential framework".

### What does "macroprudential" mean?

The word "macroprudential" indicates that something – such as a regulation, supervision or other oversight – is aimed at limiting the risk of serious disruptions in the *financial system as a whole*. Ultimately the aim is to restrict the macroeconomic costs that may result from such disruptions. So strengthening "the macroprudential framework" involves sharpening the focus of the supervisory and regulatory structure as a whole in order to reduce the risk of future systemic crises.

"Macroprudential" is distinguished from "microprudential". "Microprudential" indicates that something is aimed at reducing the risks of failure of *individual financial institutions*, quite regardless

of the consequences of such a failure on the financial system and economy as a whole. The purpose of this can most closely be characterised as investor or consumer protection, even if various microprudential measures can sometimes also have effects that protect the system.

Two dimensions of a macroprudential approach can be distinguished. Firstly, there is concern for how risk is distributed in the financial system at a given point in time; *the cross-sectional dimension*. Secondly, there is concern for how the aggregated risk develops over time; *the time dimension*.

The cross-sectional dimension concerns how to handle the risk of simultaneous spread of problems over the entire financial system. Such contagion risks exist partly due to the interlinking of institutions, for example through exposures to each other, and partly due to their exposure to the same type of or highly correlated risks.

An analogy can be used to illustrate the difference in emphasis of macro- and microprudential approaches. Borio (2009b) compares the financial system to a portfolio of securities, in which each security represents a financial institution. With a microprudential perspective each loss affecting an individual security (financial institution) would be equally important regardless of the security (institution) in which it arises. In contrast to this a macroprudential perspective means that one is only concerned with losses in the portfolio (the financial system) as a whole. The latter approach is concerned with the correlation between institutions and the degree of diversification in a *system as a whole*.

Hence, from a macroprudential perspective it is possible that individual institutions may appear to be stable while the financial system as a whole is not. This would be the case if, for example, an individual institution has a well-diversified asset portfolio while concentration in the financial system as a whole is high. Even if all institutions spread their balance sheet risks, it may be at the price of an increasing number of them being exposed to the same type of risk. In that way a negative shock could more easily affect several institutions simultaneously; the non-diversifiable risk in the system increases.

An important difference between both approaches is the way of looking at risk. With a macroprudential approach the aggregated risk depends on the collective behaviour of the institutions. The fact is that institutions can collectively affect the prices of financial assets and how much they are traded in the economy. This is of significance for the state of the economy as a whole, which in turn feeds back into the state of the institutions. A microprudential approach disregards such feedback loops, that is it treats risk as given externally; exogenous. Instead the starting point is that an individual institution in isolation has very little impact on the market and the economy as a whole.

The time dimension of a macroprudential approach concerns how the risks to the system as a whole may be augmented, partly

by the way in which actors in the financial system interact, partly by feedback loops between the financial system and the real economy. Procyclical tendencies in the financial system are a well-known phenomenon. In periods of strong growth there is an increase in demand for loans for corporate investments and housing purchases. During such an upturn the perception of risk normally decreases. And among borrowers and lenders there are often tendencies towards over-optimism about the permanence of the upturn. This pushes up the prices of different types of asset, such as property, and reduces risk premiums. Competition for profitable transactions increases. Banks expand their balance sheets while trying to increase their leverage and finance themselves through shorter maturities. The banks that fail to do this are normally punished by the stock market. But when the economy turns everyone wants to reduce their exposures at the same time and sell assets that are regarded as particularly risky. This can be seen as a sound and rational response on the part of individual institutions. It is also behaviour that is normally encouraged from a microprudential perspective. But when all institutions simultaneously sell the same type of asset the prices of these assets will fall dramatically. This can in turn force institutions to sell other assets, which pushes down market prices generally. Price volatility and the correlation between different types of asset increases. When institutions suffer increasing losses, liquidity in important markets can disappear.

And when banks simultaneously restrict lending and raise lending rates a lot of borrowers may run into problems. The number of corporate bankruptcies increases, resulting in greater loan losses for the banks. Negative feedback loops thus arise between the financial and the real economy. Unlike the pure microprudential approach, the macroprudential approach takes into account the fact that behaviour that can seem reasonable from the perspective of the individual institution may have undesirable effects on the system as a whole through various feedback loops.

### Regulation, supervision and oversight – who does what?

There are two different views regarding financial supervision, oversight and regulation – one system focused (macroprudential) and one institution focused (microprudential). The latter is usually associated with the function of the supervisory authorities, while the former is to a greater extent associated with the role of central banks in promoting stability in the financial system. The fact that central banks, along with their monetary policy task, often play such a role is partly due to their central function in the major payment systems and their unique ability to provide liquidity in the banking system and strengthen the functioning of the market.

It must be pointed out, however, that there are supervisory authorities, such as the Swedish Finansinspektionen, that also have

tasks associated with the stability of the financial system besides their institutionally focused tasks. There are also central banks whose tasks include institutionally focused supervision, though this is not the case in Sweden. Despite the exceptions, this distribution of duties between supervisory authorities and central banks is fairly typical. This is so quite simply because the two tasks require slightly different competencies. The agencies tasked with supervising individual institutions often employ a large proportion of business economists, accountants and lawyers. The supervisory authorities often have an advantage as regards understanding how risk management is practised in the individual institutions. Central banks lay greater weight on having macroeconomists and financial economists on their staff and generally have an advantage as regards understanding the links between the financial system and the macroeconomy and how financial markets function.

Working methods also differ between central banks and supervisory authorities, not least as regards powers of intervention and influence, for example in the case of undesirable behaviour on the part of actors in the financial sector. Supervisory authorities usually have considerable powers to intervene directly against individual institutions, for example through regulation, injunctions and sanctions. Central banks often have considerable capacity for analysis, but must to a great degree depend on their ability to come up with convincing arguments in order for their risk assessments to achieve an impact on financial sector behaviour.

However, as indicated previously there are considerable differences between countries. Even if central banks often play a role that is linked to financial system stability, the formulation of the mandate and corresponding powers may vary. The organisation and location of supervision can also differ between countries. Some countries have all financial supervision gathered under one agency, while other countries have opted for a structure where different agencies have the responsibility for different financial activities, with separate agencies for banking, insurance and securities trading, for example. In some countries banking supervision is located within the central bank, while in other countries it is entirely separate. In the wake of the crisis many countries decided to make a clearer link between responsibility for institutionally focused supervision and system oriented supervision. Germany and Belgium for example recently took steps towards giving their respective central banks clearer responsibility for both systemic and institutional supervision.

### The situation in Sweden

In Sweden a more systematic development of a macroprudential set of tools started in response to the banking crisis of the 1990s. That crisis revealed several serious shortcomings, both at the banks and with regard to the authorities' preparedness. The financial sector at that time largely lacked a developed culture for managing the

increased risk brought about by rapidly expanding lending following the eased credit regulation of the 1980s. But even authorities such as Finansinspektionen, the Ministry of Finance and the Riksbank lacked a sufficient overview of the risks in the banking system required to predict and counteract the approaching crisis. Nor had any of these authorities been given the task of adopting such an overall perspective.

Consequently, after the banking crisis it was clear that preparedness needed to be improved. According to the Riksbank Act the Riksbank, besides maintaining price stability, must promote a safe and efficient payment system. The payment system is an important part of the financial system, where banks play a central role. The Riksbank Act does not, however, give the Riksbank any direct powers of supervision of the banks, but largely refers to other methods of influencing risk-taking in the banking sector, for example using sound analysis to point out the risks and vulnerabilities of the system. In view of this, after the banking crisis of the 1990s it was natural for the Riksbank to initiate the development of analyses and stress tests of a macroprudential nature. Since 1997, the Financial Stability Reports have become a central part of the Riksbank's stability work and they represent an important starting point for a dialogue with the banks and other actors. Through the Financial Stability Reports the Riksbank has pioneered the publication of a macroprudential analysis. Since then central banks in about sixty countries, the International Monetary Fund and European Central Bank have followed suit.

In Sweden Finansinspektionen is responsible for bank supervision. The emphasis of the supervision is on individual institutions and consumer protection. However, besides striving for good consumer protection, Finansinspektionen's instructions include the task of sustaining financial system stability. Within the framework of this task Finansinspektionen also conducts what is called stability supervision, and like the Riksbank publishes stress tests for individual institutions. Although there is some overlap, Finansinspektionen's working methods differ somewhat from those of the Riksbank in that it adopts a more atomistic perspective regarding systemic risks. Requirements of the daily, institutionally focused supervision are also high and take a lot of resources from Finansinspektionen's stability supervision.

The need to coordinate measures to promote stability in the financial system has therefore become increasingly clear, and since the Swedish banking crisis of the 1990s cooperation between the authorities has evolved. For a number of years there has been a Memorandum of Understanding (MoU) between the Riksbank, Finansinspektionen and the Ministry of Finance to cooperate and exchange information on matters regarding financial stability and crisis management. Since its appointment as Bank Support Authority in 2008 the National Debt Office is also included in the MoU. The tasks of the support authority include deciding on support measures for distressed banks.

The Riksbank has also entered into Memoranda of Understanding on financial stability and crisis management with other central banks and foreign authorities with roles associated with financial system stability.

### Too much microprudential and too little macroprudential

The fact that there are now calls in the international debate for a stronger macroprudential framework largely stems from far too much focus in many places on the health of individual institutions and far too little focus on broader developments, for example the expansion of credit in the economy, and on the interlinkages between institutions in the financial system. Above all, financial supervision has not taken sufficiently into account the risks of financial problems becoming highly contagious as a result of the financial institutions' significant exposures to one another and their often similar exposures. It is precisely these contagion effects that may have the most serious repercussions for the financial system and, ultimately, the real economy.

Some factors have also been procyclical, so that problems in the financial sector have had a negative impact on the real economy and vice versa. In good times, as has been mentioned, there is almost always a tendency to expand the provision of credit and to dismiss the risks this entails. However, when the downturn comes, the same actors tend to run for the exits at the same time, which serves only to worsen the situation overall. When conditions in the global financial markets deteriorated in autumn 2008, credit risk premiums increased very rapidly, particularly for the borrowers who were perceived as particularly high risk. Banks and other financial institutions all over the world started to reduce their exposures and leverage. The rapid decline in borrowing reinforced the downturn in global economic activity. This in turn accelerated the substantial fall in asset prices and increased the banks' loan losses. A vicious circle arose in the global economy in which the financial turmoil aggravated the weakening of the real economy and vice versa.

Some characteristics of the regulatory framework, such as the capital adequacy requirements under Basel II and certain accounting rules for loan losses, augmented the cyclical tendencies of the financial system. These characteristics of the regulatory framework have – at least at a theoretical level – long been known, but there have been no effective mechanisms in place to counteract them.

Nor have the supervisory arrangements adequately reflected the increased internationalisation of the financial sector. In recent decades financial markets have become increasingly interlinked and large, complex financial institutions now conduct extensive operations in a number of countries. For example, about half of the Swedish banks' assets and earnings originate outside the country, mainly from the other Nordic countries. At the same time, supervision has mainly



been conducted on the basis of national mandates and focused on companies within individual, national jurisdictions. Supervision thus lacked the necessary overall view. Consequently, in the wake of the crisis a number of initiatives have arisen in many international forums to intensify stability supervision. It is a matter of both creating a clearer link between institutionally focused supervision and the more system-oriented view of stability, as well as tightening stability promoting tools in general.

### Many international initiatives

Internationally there have been many initiatives concerning reinforcement of the macroprudential framework, affecting many and varied parts of it.

#### *"Discretionary" corrective tools*

A substantial part of the discussion currently concerns the need for effective "corrective tools". By this is meant tools that better allow the authorities to influence risk behaviour in the financial sector and increase the resilience of the financial system generally. This includes finding ways to ensure that the assessments of the authorities have a sufficient impact on the risk behaviour of the financial actors. Apart from achieving effective communication, we also need to think about whether we have the tools needed to put sufficient pressure on the actors to make them alter their behaviour.

A question that has been keenly discussed is whether interest rate policy can be used to a greater extent to reduce the tendencies towards the build-up of risk in the economy. In addition, there are various proposals that aim to reduce the liquidity risks that have arisen because of the banks' increasing dependence on short-term funding from the securities markets. The possibility to impose an extra capital adequacy requirement on particularly large and complex (and therefore systemically-important) banks has been discussed. Increased possibilities of deviating from the principle of reporting assets at fair value have also been discussed. Another proposal is based on a loan-to-value ceiling, i.e. the size of loan the banks are allowed to give in relation to the value of the collateral. For example the authorities in Hong Kong have recently introduced such a possibility to suppress excessive credit expansion.

#### *Automatic corrective tools*

One question that has been much discussed is to what extent "corrective interventions" in financial institutions should be based on assessments in the individual case or if they should be based on firmer and more predictable rules in the form of more or less automatic mechanisms. In the debate proposals have been put forward for different types of automatic stabilisers that could be used to counteract the procyclical effects of problems in the financial

sector. They include tools to dampen risk-building tendencies and increase banks' resistance to disruptions. One such proposal concerns the possibilities of allowing banks' provision for loan losses to vary in a way that dampens rather than augments cyclical fluctuations. The idea is that the banks could make greater provisions in "good" times, thus being able to report a more even level of loan losses over the cycle; *dynamic provisioning*. Another proposal is to introduce countercyclical capital buffers; that is to require the banks to maintain larger capital buffers in boom periods when there is a tendency for the provision of credit to expand, but smaller buffers in periods when growth is more dampened. Allowing liquidity buffers and loan-to-value ceilings to vary with the economic cycle in accordance with some fixed rule are also examples of the automatic stabilisers that have been discussed.

#### *Coordination of information and assessments*

A question that has been discussed is how authorities may strengthen information gathering on the conditions in the financial sector and the rest of the world in order to be better able to assess the risks of future crises in the financial system. The complex structure of the financial system has indicated the importance of increasing transparency of the financial sector. Another problem has been to see the risks that have built up beyond one's own jurisdiction. Previously crises were mainly generated at home. This time in Sweden and many other countries the crisis was largely imported from outside. There is therefore a need to coordinate information and assessments across borders in a considerably more broad-based way than before.

Much of the discussion is therefore devoted to how more appropriate institutions can be created to this end. Work is now underway in Europe to set up a new advisory body, the *European Systemic Risk Board (ESRB)*. One of the tasks of this body, which will be located at the ECB, will be to gather and analyse information that may be of significance to the stability of the financial system in the EU.

In order to strengthen the coordination of financial supervision in the EU the existing committees for collaboration on the supervision of banking, securities and insurance operations are now being converted into authorities. This will give these bodies greater powers of intervention.

A great challenge will of course be to develop tools for the analysis that will form the basis of assessments of system threats and any need for countermeasures. One of the problems has been that the risks have built up during periods when the financial sector has appeared to be in excellent health, at least on the surface. And the difficulties of determining whether credit expansion, for example, is the result of over optimism or is fundamentally justified should not be underestimated. This draws attention to the importance of regular research and development to produce better indicators of the build-up of systemic risks.

## Concluding remarks

The focused work that the Riksbank has carried out since the 1990s to develop its stability analysis and other stability-promoting tools probably contributed to the fact that the Swedish financial sector went into the current crisis better equipped than was the case in many other places in the world. At the same time we know that when times are good it may be tempting to ignore the warnings of the authorities and it may be difficult to resist the opportunity to expand when all the indicators are positive. The dramatic credit expansion in euros implemented by several of the Swedish banks in the Baltic countries is one example of a behaviour that has entailed considerable risks, something that the Riksbank has pointed out in several Financial Stability Reports. When these countries went into an economic downturn this behaviour gave rise to problems that cannot be ignored.

The Riksbank has concrete tools, mainly in the form of different ways of providing liquidity to the banking system, for *handling* a crisis. But for *preventing* the emergence of a crisis the Riksbank's instruments are for the most part "soft". It is a question of persuading and convincing those involved with good arguments, something that is usually referred to as "*moral suasion*". This distinguishes the Riksbank from, for example, Finansinspektionen, which has wider powers to intervene directly at individual institutions.

For the Riksbank the crisis provides an opportunity for self-examination that should not be lost. Not least there may be reason to consider different ways of achieving a greater impact for its analyses and assessments of the behaviour of the financial actors. Can we be clearer and more direct when formulating warnings and risk scenarios? Can we, for example, go public to a greater extent, by using open letters and so on, in order to increase the pressure on banks to change their risk behaviour? And how are we to handle the banks' increasing foreign currency lending? These are examples of questions on which the Riksbank must take a position.

Earlier financial crises have mainly arisen in individual countries or regions and for that reason were mainly national concerns. The global extent of the current crisis points to the need to further develop international cooperation regarding financial regulation, supervision and crisis management. Extensive efforts are now underway around the world to design a regulatory and supervisory system that will reduce the risks of a new major financial crisis.

International efforts to develop a macroprudential toolbox are as yet in their infancy, and we still do not know which path future regulation will take.

There is a risk that some measures may reduce transparency and thus the possibility of detecting risks in the banking sector. For example, too much flexibility in the accounting rules as a result of it being easier to deviate from the fair value principle could increase the risk of banks – or government authorities – being tempted to manipulate valuations to make a bank look healthier than it really is.

As regards the different corrective tools being discussed, automatic countercyclical mechanisms have the advantage of being transparent and predictable, thus resulting not least in greater legal security for the institutions concerned. In that perspective countercyclical capital buffers stand out as a somewhat more transparent form of automatic stabiliser than dynamic

provisions, for example, which are to a greater degree dependent on the banks' accounting, which in turn is easier to manipulate. However, automatic stabilisers in general reduce precision and are more indiscriminate than "discretionary" interventions based on case by case assessments. Relying entirely on discretionary intervention, however, increases the risk of not correcting dangerous developments in time. It is likely that the authorities may need a combination of automatic stabilisers and discretionary tools in their toolbox.

However, the questions as yet unanswered are many and difficult, including how different corrective tools affect the real economy. Mechanisms that affect credit expansion may of course have an impact on the growth rate and other real economic factors, which in turn are input variables in monetary policy analysis. It cannot be ruled out that the stability objectives may in some cases come into conflict with the monetary policy targets.<sup>136</sup> How to reduce the risks of such a conflict will be an important future challenge.

Given the significance of stability in the financial system, however, it is also important to deepen cooperation between authorities and to make the institutional framework, national and international, as expedient as possible. This requires not least that mandates, powers and competence are matched. An important issue is the distribution of responsibility between central banks and supervisory authorities and whose assessment will form the basis of any corrective interventions. If the work of the newly established ESRB is to be effective it is important that its analyses and conclusions have an impact.

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<sup>136</sup> See, for example, Svensson (2009).

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## ■ Articles in previous stability reports

■ 2009:1

### **Global recession and financial stability**

*As the financial crisis has gained ground in global financial markets, the economic situation has deteriorated very quickly and the world economy is now in recession. This means that what started as a crisis of liquidity, has increasingly become a solvency crisis concerning the survival of banks. The purpose of this article is to discuss, on the basis of a number of earlier crises, how the financial and economic crisis the world economy is currently undergoing may continue to develop, and what effects this may have on the bank's problem loans and on the financial system as a whole.*

*The article starts with an overview of the current macroeconomic situation. A number of crises occurring since the beginning of the 1990s are then examined, followed by what lessons can be learnt from them with regard to the current crisis. In conclusion there is a section on what government agencies worldwide are doing to protect financial stability and prevent a deepening of the economic crisis.*

■ 2008:2

### **From local to global – today's crisis in the light of yesterday's**

*The present international financial crisis has led to intensive crisis management work on the part of market participants and authorities. An important component of this work is to try to identify what has gone wrong and why. It is also important to determine whether the crisis has been met by relevant crisis measures that restore confidence, minimise the costs to society and reduce the risk of moral hazard. Authorities and market participants have a lot to learn from the present situation. Although the crisis is still underway, it is important to start this discussion now. The aim of this article is to try to understand the current crisis in the light of experience gained during the Swedish bank crisis in the early 1990s. The article begins with a comparison between what is happening now and what happened in Sweden at the beginning of the 1990s. We examine how the underlying weaknesses have developed, how these weaknesses have gradually become manifest and how the crisis has subsequently spread. From this starting point, we discuss crisis management in theoretical as well as practical terms. The article concludes with sections on the lessons that can be learned and forward-looking strategies.*

## ■ 2008:1

**Liquidity risk in the banking system**

*During the financial crisis in the autumn and spring, liquidity risks in the financial system have been very apparent. When demand collapsed in a number of securities markets during the autumn of 2007, banks were affected both in the United States and Europe by acute funding problems. The whole of the global bank sector has been affected by the liquidity crisis since then. Several central banks have taken steps during the crisis to attempt to ease the strains. The question is what can central banks and other authorities do to reduce these risks in the future. Is there a need to create a completely new regulatory framework for management of liquidity risk?*

## ■ 2007:2

**Financial stability – new challenges**

*With a separate article the Riksbank marks the 10th anniversary of its reports on financial stability. The Riksbank advocated at an early stage that risks and vulnerabilities in the financial system should be discussed openly. Since the time of the first report a lot has happened in the financial field which has led to a number of positive effects on both the efficiency and the stability of the financial system. But developments also bring authorities with responsibility for stability in the financial system face to face with a number of challenges. The article, describes these challenges and what they may entail for the Riksbank's future activities regarding financial stability.*

Read more about previous articles at [www.riksbank.se](http://www.riksbank.se)



## Glossary

**Arbitrage:** Use of differences between prices or rules in different markets or business areas to gain from them.

**Asset-backed commercial paper (ABCP):** A short-term security that is backed by other financial assets.

**Assets-backed security (ABS):** A security whose value and income are derived from and backed by underlying assets. The collateral is often some form of loan.

**Asset Management Company (AMC):** A liquidation company established to take over bad assets to arrange orderly liquidation.

**Balance sheet:** Shows a company's financial position at a particular point in time. It consists of an assets side, for example liquid assets, bank deposits, receivables, and a liability side, for example equity, bank loans.

**Bankruptcy:** Legal procedure whereby in principle all assets owned by an indebted legal entity or an individual are taken over by a receiver to pay all debts.

**Basel Core Principles (for Effective Banking Supervision):** Rules and regulations for banks and regulatory authorities that define 25 principles to provide a minimum standard for good practices of banking supervision.

**Basel II:** Bank standards regulating how much capital a bank must retain in relation to the risk it faces.

**Basis point:** One basis point is one hundredth of one per cent, i.e. 0.01 per cent. Thus, 100 basis points is equivalent to 1 per cent.

**Basis spread:** The difference between the three-month interbank rate and the expected policy rate.

**Bond:** A fixed-income promissory note or debt instrument issued by a government, municipality, credit market company, mortgage institution or large company. Bonds generally have a time to maturity of at least one year. Periodic payments are made prior to maturity, at which time the principal amount is repaid.

**Bond market:** The credit market segment for trading fixed-income securities issued for a period of more than one year.

**Brokerage:** Transaction cost when an asset is bought or sold.

**Capital market:** Umbrella term for the stock, credit and derivative markets.

**Central counterparty (CCP):** The institution that acts as a seller to all the buyers and a buyer to all the sellers of the traded instruments.

**Central securities depository:** An institution that handles securities transactions post-trade.

**Certificate:** A security for trading in the money market. A certificate is a debt instrument issued by e.g. a bank or a company with the purpose of borrowing money. Maturity is a maximum of one year.

**Clearing:** The compilation of instructions about transfer of a payment to a recipient's account.

**Collateralised debt obligation (CDO):** A structured credit instrument made up of bonds from many different securitised loan portfolios and other assets. This composite portfolio is then structured into segments with different credit risks.

**Core Tier 1 capital:** Tier 1 capital after deductions for hybrid capital.

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

**Counterparty risk:** The risk of a counterparty in a business transaction defaulting on the obligations.

**Covered bonds:** A bond whose holder has a special benefit right in a bankruptcy. Covered bonds are intended to be more creditworthy than non-covered bonds, which reduces the cost of funding.

**Credit:** The right to dispose of a sum of money belonging to the creditor (usually a bank) in return for compensation, mainly interest.

**Credit default swap (CDS):** A contract in which one party buys protection against the credit risk in an underlying bond in return for paying a premium; the other party receives the premium in return for accepting the credit risk. The instrument is used as insurance against credit risk. The premium for the CDS usually measures the credit risk in the company's underlying assets.

**Credit insurance:** A policy against loan losses. The buyer of the insurance is protected against a specific credit risk. The seller accepts this risk in return for a premium and incurs any loss on the loan.

**Credit market:** A market for trading borrowed capital with different maturities. It comprises fixed-interest securities.

**Credit rating agency:** A company that assigns ratings, i.e. makes an assessment of the credit risk associated with a company and indirectly with its securities.

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

**Credit spread:** The difference in yield between securities with the same maturity but different credit risks, for example, the difference between the corporate bond rate and the rate for government bonds.

**Creditworthiness:** The debt-servicing ability of a country, a company or an individual. Creditworthiness is classified to indicate the ability to pay. The ratings are usually made on a scale from AAA to C, where AAA is best.

**Currency swap:** An agreement to buy/sell a currency at the current rate and sell/buy back the same currency at a specified exchange rate on a specific day in the future.

**Currency transaction:** The transaction when one currency is traded for another.

**Current ratio:** A measurement of a company's liquidity indicating that company's ability to repay current liabilities.

**Debt/equity ratio:** A company's liabilities in relation to total assets.

**Debt ratio:** Household debt in relation to disposable income.

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

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

**Emergency liquidity assistance:** The provision of credit on special terms by the central bank to an institution, e.g., a loan against collateral other than what is normally required, or a guarantee whereby an institution without collateral can borrow on the market.

**Equity:** Item in a company's balance sheet showing the difference between assets and liabilities, including, for example, capital provided by owners, retained profits and reserves.

**Euro Commercial Paper (ECP):** Short-term loans without collateral issued by a bank or a company on the international money market in a currency other than that company's domestic currency. For example, if a US company issued a certificate in CAD, that company would have issued a Euro Commercial Paper.

**Expected default frequency (EDF):** The probability that a listed company will default within a year. Calculated as the probability of the market value of the company's assets being exceeded by its liabilities when the latter fall due. Used as a measure of default risk.

**Financial institution:** A broad term for companies whose primary business is operating on the financial markets, for instance banks or mortgage institution.

**Financial markets:** A collective term for markets where financial assets are bought and sold. The financial markets in Sweden include the stock, fixed-income and foreign exchange markets.

**Fixed-income market:** The market for instruments that provide a return in the form of interest. It is usually subdivided into the bond market and the money market.

**Group:** A group of companies joined through ownership.

**Hybrid capital:** Certain types of perpetual subordinated notes may be included in the Tier 1 capital if permission is granted by the financial supervisory authorities. For Swedish banks the hybrid capital can comprise at most 30 per cent of the total Tier 1 capital. Hybrid loans with step-up, that is, where the interest margin on the loan increases after a given period of time, may amount to a maximum of 15 per cent of the Tier 1 capital.

**Implied volatility:** Market participants' expectations of future variations in share prices, derived from option pricing. Volatility is usually measured as the standard deviation of the share's rate of return.

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

**Interbank rate:** A daily reference rate based on the interest rates for unsecured loans that banks offer to one another. In Sweden the rate that banks charge each other for SEK loans is called STIBOR (Stockholm Interbank Offered Rate). STIBOR is used as a reference for rate setting or pricing of derivative contracts.

**Interest coverage ratio:** A measure of a company's ability to meet financial costs.

**Interest ratio:** A household's post-tax interest expenditure in relation to disposable income.

**ISDA (International Swaps and Derivatives Association):** A global organisation for market participants trading in OTC derivatives.

**Issue:** Issuance of securities.

**Key policy rate:** The interest rates which a central bank sets for the purpose of monetary policy. In Sweden, they are the repo rate and the deposit and lending rates. The repo rate is the most important.

**Liquidity:** A measure of a company's or an organisation's short-term ability to pay. Also the ease with which an asset can be bought or sold.

**Market risk:** The risk that fluctuations in market prices, mainly for interest rates, shares and currencies, will result in losses.

**Monetary policy:** Aims to influence inflation, the exchange rate and/or economic activity by altering the amount of money in circulation and adjusting policy rates.

**Money market:** A market for trading with instruments that give a fixed return (interest) with a maturity of less than one year. One of the money market's most important functions is to manage liquidity for banks and other financial institutions. Instruments traded on the money market include treasury bills and certificates.

**Mortgage-backed security (MBS):** A security whose value and income are derived from and backed by an underlying asset in the form of a mortgage or collection of mortgages.

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

**Net interest:** Consists primarily of interest income less interest expenditure for funding and deposits.

**Net operating income:** The difference between rent income and the operating and maintenance costs for a property or property company.

**Net wealth:** Assets minus liabilities. Net wealth may therefore be negative.

**Operational risk:** The risk of losses due to inadequate or failed internal processes, failed systems, or external events.

**Over the counter (OTC):** Transactions arranged directly between a buyer and a seller without the participation of an exchange.

**Payments system:** The system in which all payments are made and settled centrally. The payments system in Sweden consists of 14 large credit institutions, the Swedish National Debt Office, the Riksbank and four clearing organisations which all participate in the Riksbank's RIX system.

**Present value:** The current worth of a future amount. Calculated mainly in connection with investment appraisals.

**Price/Earnings (P/E) ratio:** The price of a share in relation to expected earnings.

**Private equity investment company:** Company that invests or acts as an intermediary in the provision of risk capital.

**Profitability:** A company's operating surplus in relation to its total assets.

**Repo:** A financial instrument resembling a 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 greater sum of money. The difference between the sale and the repurchase is equivalent to the interest rate on a loan.

**Repo rate:** The Riksbank's primary key policy rate.

**Return:** The difference between the amount invested and the amount received as repayment; that is, the profit on invested capital.

**Return on equity:** Concept used to assess profitability; the same in principle as return.

**Risk capital:** Equity or own capital. Also referred to as venture capital. The term indicates that the risk is greater than that on borrowed capital.

**Risk capital requirement:** The capital required to cope with unanticipated losses.

**Risk-free assets:** An asset that provides a return which is certain without exposing the investor to any form of risk. Approximated in practice by government bonds.

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

**Risk-weighted assets:** Total assets and off-balance sheet commitments totalled, valued and risk-weighted in accordance with the prevailing capital adequacy regulations.

**Securitisation:** A financing process whereby a number of loans (e.g., mortgages or credit card loans) are bundled together and sold on to a company created for the purpose and financed by issuing securities in the market.

**Settlement:** Final regulation of debt when money or securities are transferred from one party to another, usually payment from one account to another.

**Solvency:** A company's ability to pay its debts as they fall due.

**Spread:** Usually the difference between two interest rates. In the bond market, spread is measured in basis points (see basis point).

**Standing facilities:** The lending and borrowing facility which the Riksbank provides for the purposes of monetary policy and which eligible institutions may use on their own initiative in accordance with certain terms and conditions.

**Stress test:** Analysis of scenarios to test the resilience of banks and households to unexpected and negative events.

**Structured products:** Pools of securitised loans. The most common products are collateral debt obligation (CDO) and mortgage-backed securities (MBS).

**Subprime:** The segment of the US mortgage market for borrowers with low credit ratings – often first-time borrowers with less than the average household income.

**Swap:** A bilateral agreement to exchange a specific currency/interest rate in return for another currency/interest rate for a predetermined period and according to specific conditions.

**Tier 1 capital:** Equity capital less proposed dividends, deferred tax assets and intangible assets such as goodwill. Tier 1 capital can also include qualified types of subordinated debt, such as hybrid capital.

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

**Transaction cost:** Costs associated with trading in addition to the purchase price; for example finding a buyer/seller, negotiations, legal costs, etc.

**Transitional regulations:** As of 2007 Q1, Swedish banks report risk-weighted assets in accordance with the new capital adequacy rules (Basel II). For the major Swedish banks this entails a reduction in the capital adequacy requirement, primarily as a result of their relatively large share of lending to households. However, up to 2010 transitional regulations apply, which mean that the banks can only take advantage of the reduced capital requirement in stages. The transitional rules will probably continue to apply in 2011.

**Vacancy rate:** A property market term for the proportion of unlet units.

**Write down:** Accounting term for reducing an asset's book value to correspond to its market value.