



Financial Stability Report 2009:1

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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 7 and 26 May. The Report uses data available as at 26 May.

Stockholm, June 2009

Stefan Ingves

GOVERNOR OF SVERIGES RIKSBANK

The Riksbank and financial stability

The 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

When the previous Financial Stability Report was published in November 2008 the greatest threat to the banks was the shortage of liquidity. The Riksbank's liquidity assistance and the government's guarantee programme for the banks' borrowing have contributed to reducing this risk. At the same time, there are signs that conditions on the international credit markets have eased slightly. There is still considerable sensitivity to individual shocks. The confidence crisis may therefore gain new impetus, which could have consequences for the banks' possibilities to obtain funding.

Economic activity in the world has deteriorated considerably since November. The forecasts for growth have been gradually revised down and the world economy is expected to shrink by a good one per cent during the current year.¹ The poorer economic activity in the world hits Sweden hard, and GDP is now expected to fall by about 4.5 per cent in 2009. In 2010 growth is expected to be slightly positive, both in Sweden and abroad. The poorer economic activity has a negative effect on the outlook for the banks' borrowers and credit risk is now the most immediate risk for the banks.

In the Riksbank's main scenario for the banks' loan losses, the banks are altogether expected to make loan losses totalling SEK 170 billion in 2009 and 2010. Just under 40 per cent of these losses are expected to stem from the bank groups' operations in the Baltic countries and in the rest of eastern Europe. However, the banks have sufficient capital to meet losses of this magnitude, and are well-capitalised in an international comparison.

However, there is considerable uncertainty in the assessment of future economic developments and their effects on the banks. The Riksbank has therefore examined the banks' resilience towards a much worse, but less likely, scenario in what is known as a stress test. In this test, too, the banks manage the statutory level for the Tier 1 capital ratio.

The Riksbank's assessment is that the authorities' measures are an important condition even now for ensuring that the financial system in Sweden will be stable. Sweden stands well-equipped, even if the situation were to worsen.

¹ See Sveriges Riksbank (2009), "Monetary Policy Update", April.

The Riksbank's assessment of financial stability

THE WORLD ECONOMY'S DEEPEST CRISIS SINCE THE SECOND WORLD WAR

The global financial crisis intensified greatly in autumn 2008 in connection with US investment bank Lehman Brothers filing for bankruptcy protection. The functioning of most of the markets was seriously disrupted as the result of a lack of confidence between financial institutions. Trading in certain securities completely ceased to function. In turn, this meant that financial institutions borrowed increasingly large volumes at ever shorter maturities on the interbank market to manage their funding needs, at the same time as the functioning of the interbank market itself worsened. The Swedish financial markets were also hard hit and some sub-markets ceased functioning. Just like banks around the world, banks in Sweden encountered problems in funding themselves in the market. However, unlike many other countries, the Swedish interbank market continued to function relatively well, even if activity declined substantially. Since November, when the previous Financial Stability Report was published, the situation for banks globally has worsened in that world economic activity has deteriorated substantially. In November we highlighted the risk that the economic downturn could be more serious and more prolonged than was expected at that time. Since then economic activity around the world has continued to weaken considerably with a severe deterioration in production and demand. The forecasts for growth have been gradually revised down and the world economy is expected to shrink by 1.1 per cent during the current year.² World trade fell by almost 10 per cent in December 2008, compared with the same month in the previous year, which is the largest decline since the end of the 1940s. The poorer economic activity in the world hits Sweden hard, and GDP is now expected to fall by about 4.5 per cent in 2009. Exports fell heavily towards the end of last year and the labour market situation has deteriorated. The Riksbank is assuming that GDP in Sweden will fall by roughly as much in 2009 as during the economic crisis at the beginning of the 1990s, although the fall at that time took place over several years. In 2010 growth is expected to become slightly positive, both in Sweden and abroad.

At the same time as the credit tightening following in the wake of the financial crisis has contributed to worsening economic prospects, the economic recession has in turn contributed to stricter credit terms. This means that both the global and the Swedish economies have entered a situation where falling activity and tougher terms on the credit market reinforce one another. However, in Sweden there are so far few signs that companies and households will suffer a credit tightening more than is normally the case in an economic downturn.

² See Sveriges Riksbank (2009), "Monetary Policy Update", April.

THE AUTHORITIES ARE CONTINUING TO TAKE EXTENSIVE MEASURES...

Central banks, including the Riksbank, have lent large amounts to the banks at longer maturities than normal and against a broader spectrum of collateral than previously, to secure the banks' supply of liquidity. This measure was necessary to meet the banks' borrowing requirements, as they had been unable to obtain funding on the market. In addition, several central banks have provided emergency liquidity assistance to individual institutions. For instance, during the autumn, the Riksbank provided special liquidity assistance to two financial institutions, Kaupthing Bank Sverige AB and Carnegie Investment Bank AB. The Riksbank has also entered into swap agreements with the central banks in Estonia and Latvia, where the Swedish banks have substantial activities. The financial systems in the Baltic countries are closely entwined with the Swedish system. Consequently, the Riksbank has decided to contribute towards strengthening the respective central banks' ability to safeguard financial stability in their countries. In May 2008 the Riksbank also entered into a swap agreement with Iceland's central bank, for the purpose of helping promote macroeconomic and financial stability in Iceland.

Several central banks have seen their balance sheets more than treble as a result of the measures taken during the crisis. For the Riksbank these measures have meant that the lending to the banks has increased by a total of around SEK 350 billion (see the box What does the Riksbank's extra lending imply?).

In addition, central banks have cut their policy rates substantially, approaching zero per cent, to mitigate the effects of the global economic slowdown. If a central bank were to need to further stimulate the economy in this situation it has other means than the policy rate at its disposal. For example, the Bank of England and the Federal Reserve have begun to purchase various types of domestic financial assets with the aim of influencing longer interest rates.

On top of this, governments in several countries have continued to develop their rescue packages. These contain guarantees and capital injections to minimise the risk of more defaults in the bank sector and thereby contribute to restoring confidence between institutions. The government support packages are also aimed at encouraging the banks to lend more, as shortage of credit could aggravate the economic downturn. Several countries have also decided on a more expansionary fiscal policy to counteract the downturn in economic activity. The Swedish government's guarantee programme, which was introduced last autumn, has been utilised by four financial institutions so far, and the outstanding amount under the programme is currently SEK 328 billion.

...BUT THE LACK OF CONFIDENCE REMAINS

During the six months that have passed since the previous Financial

Stability Report was published the financial crisis has continued. However, there are signs that the most acute stage of the crisis may have passed. During the spring, the situation on the interbank markets has eased slightly and interbank rates have fallen. This is primarily due to the central banks' large interest rate cuts and to the measures taken by the central banks to ensure access to liquidity.

Until quite recently it was very difficult for the banks to finance themselves in the bond market. It was primarily the possibility of government guarantees that was behind the increase in issued volumes on the bond market at the beginning of the year. However, there have recently been signs of some easing. During the second quarter an increasing number of financial institutions have been able to issue securities without a government guarantee, and similarly an increasing number of non-financial companies have been able to issue. This also applies to companies with poorer credit ratings. At the same time, some financial institutions have obtained funding even at longer maturities. This indicates that the risk appetite has increased somewhat.

However, the international credit markets are far from functioning in the way they did prior to the financial crisis, and the lack of confidence between financial market participants remains. One reason for this could be that there still appear to be unrealised losses in various parts of the global bank system. Further capital injections will probably be required for the banks globally as economic conditions deteriorate under the recession.

The continued lack of confidence means that sensitivity to individual shocks in the financial system remains. The confidence crisis may therefore gain new impetus, which could have consequences for the banks' possibilities to obtain funding. At the same time the credit spreads between corporate bonds and government bonds remain high, which implies an uncertainty among investors as to how the recession will affect companies' earnings capacity and credit ratings.

THE MAJOR SWEDISH BANKS ARE NOW FACING INCREASING LOAN LOSSES

When the previous Financial Stability Report was published the major Swedish banks were financially strong, profitability was good and loan losses were at historically low levels. At that point the shortage of liquidity was the greatest threat to the banks. Since then the authorities have in various ways guaranteed the liquidity in the system, the banks have injected more equity capital and it appears that some parts of the credit market have begun to function slightly better. This means that the liquidity risk is no longer at the forefront. As economic activity and prospects for the banks' borrowers have deteriorated, credit risk has taken over as the most imminent risk. The major Swedish banks are now facing substantial loan losses.

However, different categories of borrower and different countries will be affected to varying degrees (see Chapter 2). Although Swedish households are affected to a large degree by the decline in economic activity, stress tests of households' ability to pay show that they have

the scope to manage a decline in economic activity. Nor are there any other factors implying that the household sector will cause any major loan losses in the bank sector.

Prospects for the Swedish companies have deteriorated significantly as demand has declined and they have experienced funding problems. Credit risk in the corporate sector is expected to increase in the future, at the same time as companies' demand for credit declines. The number of defaults in the corporate sector has already begun to increase as a consequence of companies' financial positions having deteriorated in a short time. The defaults are expected to continue increasing on a broad front in all countries where the Swedish banks are active, particularly in cyclically-sensitive sectors such as transport and construction. This also applies to the property companies, which traditionally are large borrowers from the banks. In a comparison with the property crisis in Sweden in the 1990s, however, the current interest rate situation is more beneficial for the property companies and for the corporate sector as a whole.

The borrower group that risks causing the Swedish banks the largest loan losses at present consists of borrowers in the Baltic countries, who have been hard hit by the financial crisis and the global recession. The hard landing the Riksbank has warned of on several occasions has now hit the region, and the percentage of households and companies defaulting on payments is increasing rapidly. This development can also be seen in the Ukraine, where the situation has recently deteriorated very rapidly, resulting in an increase in payment defaults. The situation in the Ukraine is worse than in the Baltic countries, but the Swedish banks have less exposures there.

The major Swedish banks' provisions for probable loan losses increased rapidly during the first quarter of this year and loan losses are expected to increase significantly in 2009 and 2010 (see Chapter 3, the section Lending and credit risk). In the Riksbank's main scenario the banks are altogether expected to make loan losses totalling SEK 170 billion during these years. Just under 40 per cent of these losses are expected to stem from the bank groups' operations in the Baltic countries and in the rest of eastern Europe. As a result of the very strained situation in these countries the estimated default frequency is expected to increase at the same time as the loss given default figure remains high. The corporate sector, both in Sweden and in other countries where the major Swedish banks are active, will contribute significantly to the increase in loan losses. Although the amounts concerned are substantial, the losses are much less, regarded as a percentage of total lending, than those the Swedish banks suffered in the bank crisis of the 1990s. However, it is important to point out that there is considerable uncertainty regarding the main scenario.

Swedbank, SEB and Nordea have made rights issues to increase their Tier 1 capital ratios. At the same time, all four major banks have reduced or completely cancelled dividends to shareholders. All of the major Swedish banks have sufficient capital to meet the losses assumed in the Riksbank's main scenario and appear to be well-capitalised in an international perspective.

CONSIDERABLE RISKS LIE AHEAD

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 (without any order of precedence). The arrows show the direction in which the risk has changed since the previous Financial Stability Report.

- | | |
|---|--------------------------|
| ↑ | Increased risks |
| ↗ | Slight increase in risks |
| → | Unchanged risks |
| ↓ | Decreased risks |

↑ **Poorer development of the real economy**

Many economic analysts predict, like the Riksbank, that the world economy will gradually make a recovery, which will begin during the second half of 2009. However, experiences show that recessions reinforced by and coinciding with financial crises, and which moreover affect several countries, may be longer drawn out and the recovery may be both weaker and more protracted. In such a scenario there is a risk that the banks will tighten their credit granting even to borrowers with good credit ratings, leading to a credit crunch. This would mean that households and companies found it even more difficult to borrow for consumption and investment, and that activity in the economy would slow down further. It could mean that the negative spiral of falling activity and stricter terms in the credit market that we can see now, will worsen. 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 economic recession on the Swedish banks' loan losses. All this means that the macro economic risk has increased in comparison with when the previous report was published.

↑ **Developments in the Baltic countries**

The economic prospects for the Baltic countries have deteriorated substantially and GDP is falling heavily in these countries. It is at present uncertain how large the effect of the recession in the Baltic countries will be on Swedish banks' loan losses. Moreover, the economic situation may continue to deteriorate. There is thus a risk that the losses for the banks exposed to the region will be greater than in the main scenario. Such a scenario could damage confidence in the Swedish financial system as a whole. It could also affect the Swedish banks that are not directly involved in the Baltic countries. This risk is also assessed as having increased since November.

→ **Developments in the financial markets**

The functioning of the financial markets remains to a large degree dependent on the measures taken by the authorities, and market participants still lack confidence in one another. This means that the financial system is still sensitive to individual shocks, particularly those that originate outside the bank sector. For example, distrust of an individual government's ability to protect its banks could result in the willingness to take risks declining once again in the financial markets and in financial asset prices falling. However, there have recently been signs that parts of the financial markets have begun to function better, which is one reason why this risk is assessed as unchanged since the previous Report.

Stress tests

The Riksbank regularly carries out stress tests to assess how less probable negative events could affect the banks' resilience.

There is currently great uncertainty regarding the future development of the world economy. Similarly, there is great uncertainty as to how major changes in macroeconomic variables will affect the banks' loan losses. One cannot rule out the possibility that the situation for the banks might prove even worse than in the Riksbank's main scenario. Given this, the Riksbank describes in this report the results of a stress test where the macroeconomic outcome is considerably worse than what is expected in the Riksbank's main scenario, and the impact on credit quality greater.³ See Chapter 3 for more detailed information on the assumptions in the stress test.

Under the very difficult conditions assumed in the stress test the loan losses for the four major banks total just over SEK 300 billion during the two years in which the scenario runs. Just under 40 per cent of the loan losses in the stress test come from the banks' operations in the Baltic countries and in the rest of eastern Europe. In the stress test the loan losses in the Baltic countries amount to an average of ten per cent per annum of the banks' lending there.

In the final year of the scenario, that is, at the end of 2010, the banks' Tier 1 capital ratios varies from 4.8 per cent to 8.3 per cent. This means that all banks would manage the statutory minimum requirement of four per cent, not only in the main scenario but also under more strained circumstances.

If the stress test scenario were to become a reality, the banks could probably experience great difficulties in obtaining funding, credit ratings may come under pressure and a confidence crisis could arise. This would force the banks to take active measures to strengthen their capital situation.

³ In the stress test the Riksbank bases its assumptions on the credit portfolios described in the banks' annual reports. In addition, the Riksbank makes a couple of simplified assumptions in the stress test where the banks' exposures are categorised into homogenous groups. The Riksbank's approach therefore only provides an approximate picture of the banks' actual credit portfolios. In addition, the banks have knowledge of each individual borrower's credit rating, which is not captured in the Riksbank's stress test. If the banks were to replicate the Riksbank's stress test with their own knowledge of their credit portfolios it is therefore possible that the outcome would be different.

GOOD PREPAREDNESS TO MEET POTENTIAL DIFFICULTIES

If the situation for the Swedish banks were to become much worse and a crisis situation were to arise, the Swedish authorities are prepared to take action.

The Riksbank will continue to take whatever measures that are necessary to safeguard financial stability. The government guarantee programme also contributes to facilitating financial institutions' borrowing and to reducing their funding costs. In addition, the government introduced a capital injection programme with a framework of SEK 50 billion in February. This programme supplements the capital injections from the market. Moreover, there is the possibility to implement measures directly on the asset side of the banks' balance sheets, for instance, through government acquisitions or by insuring bad assets.

The auxiliary legislation that the Riksdag (the Swedish parliament) adopted in autumn 2008 gives the government a broad mandate to support or reconstruct a bank with serious problems. The legislation makes it possible for the Swedish government to intervene to safeguard financial stability in a way that protects the interests of Swedish taxpayers.

All-in-all, it is therefore the Riksbank's assessment that the Swedish authorities can handle the problems that could arise in a crisis situation.

Financial markets – in brief

During the autumn, the global financial system was affected by a liquidity crisis as Lehman Brothers filed for bankruptcy protection. A significant crisis of confidence arose between both banks and investors, as a result of which financial institutions encountered problems in issuing securities. Even trading with certain securities ceased to function. This led to comprehensive measures from authorities around the world.

During the most recent period of time, there have arisen indications that conditions in the international credit markets may have eased somewhat. Issues of securities have increased during the spring and certain financial institutions have succeeded in issuing bonds outside the government guarantee programmes introduced during the autumn. Even companies with lower credit ratings are starting to secure funding on the bond market. The banks' possibilities for funding on the interbank market seem to have increased slightly, albeit primarily over the very shortest maturities. The primary reason for this is that central banks have adopted a series of measures, and that they have declared their willingness to continue lending to the banks to the extent required.

However, the lack of confidence between the financial participants remains extensive, which may be due to concerns regarding the presence of further, unrealised losses in the international banking system. This indicates that the financial system remains sensitive to individual disruptions. At the same time, the situation for the banks has deteriorated during the autumn as a consequence of the worsened economic downturn. Concern over the effects of the economic activity upon companies' earnings and credit risk is reflected by continued high credit spreads, among other things.

Measures have continued to be undertaken by authorities and have become more comprehensive in their objectives of mitigating the problems on the credit markets and, additionally, stimulating a turnaround of the economic activity. An increasing number of countries have presented new rescue packages and have further developed the rescue packages implemented during the autumn. Central banks have lowered their policy rates to unprecedentedly low levels, in addition to which some have chosen to attempt to stimulate the economy with other means than just lowered policy rates. For example, the Federal Reserve and the Bank of England have started to buy domestic securities.

This chapter initially describes the overall course of the financial crisis and the actions taken by the authorities. Following this, the impact of the crisis on selected submarkets is described. The aim of the chapter is to present a depiction of the situation on the financial markets within which the banks are active, and upon which they are dependent for their earnings and funding.

The crisis in the financial markets

The financial crisis started during 2007 as a mortgage crisis in the US, but developed, during autumn 2008, into a global liquidity crisis. The triggering factor was when the US investment bank, Lehman Brothers, filed for bankruptcy protection in the wake of the mortgage crisis. Few had expected that such an important player would fail. The majority of banks, institutions and funds were exposed to Lehman Brothers and uncertainty regarding which borrowers were creditworthy increased dramatically. The consequence was a condition of great uncertainty, manifested in the serious disruption of the majority of credit markets. Even if the collapse of Lehman Brothers was the triggering factor, a number of factors contributed to the comprehensive scope and powerful impact of the crisis. Among these factors can be included the macroeconomic imbalances that had been building up in the global economy over a longer period of time and which entailed the investment of large amounts of capital in the global financial markets. At the same time, economies in the West, particularly in the US, had experienced an unusually long period of continued strong growth and low inflation. The good supply of capital available for investment and the low interest rates for risk-free assets increased the demand for assets with a higher yield as a 'search for yield' arose. As a part of this process, many new, and often complex, financial instruments were created. At the same time, investors were disregarding the risks to a great extent. In addition to these factors, there also existed fundamental shortcomings, both in the risk management of the financial participants and in the regulatory framework and supervision.

This crisis led to serious funding problems for banks around the world. Among other consequences, the banks encountered major difficulties in issuing securities with longer maturities. Trading in certain securities completely ceased to function. In turn, this meant that financial institutions borrowed increasingly large volumes on the interbank market at ever shorter maturities to manage their funding needs. Share prices on stock markets around the world fell sharply when the uncertainty regarding the banks' positions turned into a question of their survival. The process of reducing exposures and debt-to-equity ratios among banks and other financial institutions around the world intensified.

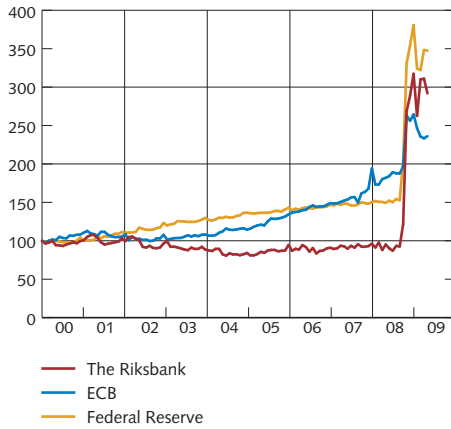
The situation on the financial markets in Sweden also deteriorated rapidly, with certain submarkets almost ceasing to function. The market for treasury bills was temporarily closed, while the market for covered bonds deteriorated significantly. Just like banks around the world, banks in Sweden encountered problems in funding themselves in the credit market. Unlike many other countries, the Swedish interbank market has functioned relatively well during the crisis, although activity has been significantly lower than normal.

Since autumn last year, the situation for banks around the world has been exacerbated by the deteriorated economic outlook.⁴ The global economic activity has continued to decline rapidly, with heavily impaired production and demand. World trade in December declined by ten per cent in comparison with the same period in the previous year. Developments in the US economy in particular are of great significance for economic development in the rest of the world. Most indicators continue to point downwards in this respect. The negative trend in the US housing market is continuing. Housing prices are continuing to fall and the number of homes for sale continues to be high. Expectations based on forward prices indicate that the drop in housing prices is expected to continue for the rest of 2009, before stabilising. The development of housing prices in the United States plays an important role for the recovery of the economy. Overall growth forecasts have been revised downwards and the global economy is expected to shrink by 1.1 per cent during 2009.

The deteriorating global economic trend is having a severe impact on Sweden. GDP is expected to decline by around 4.5 per cent during 2009. Both exports and export orders have declined dramatically and the situation on the labour market has deteriorated significantly. Initially, it was primarily export companies that were impacted, as the deterioration in the international business cycle led to reduced demand from overseas. However, as the situation has deteriorated, expectations of households and companies on the future have been significantly dampened. The tighter lending conditions following in the wake of the financial crisis has contributed to the worsening economic prospects, as it has become more difficult for companies and households to invest and consume. At the same time, the gloomy economic prospects have entailed lower creditworthiness for companies and households, and the banks have thus become more restrictive in their lending. This signifies that both the global and the Swedish economies have entered a negative spiral of declining activity and tighter conditions on the credit market.

⁴ See Sveriges Riksbank (2009), "Monetary Policy Update", April.

Chart 1:1. The central banks' balance sheets
Index, January 2000=100



Sources: Reuters EcoWin and Bloomberg

Since the summer of 2007, central banks have intervened in a variety of manners in order to mitigate and attempt to halt the effects of the financial crisis. In order to secure the supply of liquidity to the banks', the central banks have lent large amounts to the banks, with different maturities and against a broader spectrum of collateral than previously. This measure was necessary to meet the banks' borrowing requirements, as the banks had been unable to obtain funding on the market. In addition, several central banks have provided emergency liquidity assistance to individual institutions. Central banks have also introduced other, more unusual measures, which, in certain cases, have entailed that these banks have become active on markets in which they are not normally active. For example, the Federal Reserve has established a facility for the purchase of commercial paper (see Table 1). As a result of these measures, the balance sheets of several central banks have more than tripled during the crisis (see Chart 1:1).

The Swedish authorities have also adopted comprehensive measures (see the box The Riksbank's new measures). The swap agreement that the Riksbank entered into with the Federal Reserve last autumn has been extended until the autumn of 2009, which has made it easier for the Riksbank to continue to offer loans denominated in USD to its primary monetary policy counterparties. Furthermore, the Riksbank is continuing to offer credits in SEK in order to facilitate the supply of liquidity to the banks'. Unlike, for example, the Federal Reserve and the ECB, the Riksbank has not implemented any measures on the very shortest overnight market. This is primarily due to the fact that the Swedish overnight market has continued to function throughout the entire financial crisis. On the other hand, changed collateral requirements in the Riksbank's RIX system have led to the possibility for a larger amount of mortgage bonds to be pledged as collateral. All these measures have meant that the Riksbank has increased its lending to the banks by an amount of approximately SEK 390 billion, entailing a strong increase in the Riksbank's balance sheet total (see the box What does the Riksbank's extra lending imply?). During the autumn, the Riksbank also provided extra liquidity assistance to two financial institutions, Kaupthing Bank Sverige AB and Carnegie Investment Bank AB. The Riksbank has also entered into a swap agreement with the Latvia and Estonian central banks. For Latvia, this implies the possibility of borrowing amounts denominated in EUR against LVL, while for Estonia it implies the possibility of borrowing amounts denominated in SEK against EEK. The financial systems in Estonia and Latvia are closely linked to the Swedish financial system. Consequently, the Riksbank has decided to contribute towards strengthening the respective central banks' ability to safeguard financial stability in these countries.⁵

⁵ See www.riksbank.com for further information concerning these swap agreements.

In addition, central banks have lowered their policy rates sharply, approaching zero per cent, in order to stimulate activity in the economy and mitigate the effects of the global economic slowdown.

In Sweden, the Riksbank has lowered its policy rate from 3.75 per cent in December to 0.5 per cent in April. In a situation in which the policy rate is particularly low, a central bank can utilise other means, as a compliment to the interest rate policy, to affect activity in the economy. Among other initiatives, the Bank of England and the Federal Reserve have started to purchase various types of domestic financial assets, with the intention of pushing the longer term interest rates downwards, as the interest rates of these securities drop as demand increases.⁶ Most of the measures taken by the Federal Reserve are aimed at making it easier for households and companies to get access to credit and to reduce risk premiums. This strategy has therefore been called credit easing. In contrast, the measures that the Bank of England has started to implement are aimed at injecting money directly into the economy and can thus be described as quantitative easing. These measures also include elements of credit easing, in that they facilitate the supply of credit to companies.⁷ Alongside this, the governments of several countries have introduced packages of measures, including government guarantees and capital injections, developed to minimise the risk of more defaults in the banking sector. The objective of these government support packages is to contribute towards the restoration of confidence between institutions and the facilitation of the credit supply. Several countries have also decided on a more expansionary fiscal policy to counteract the downturn in economic activity.

The Swedish government guarantee programme, which was introduced last autumn, has been utilised by four financial institutions so far.⁸ The outstanding amount within the scope of the guarantee programme is currently SEK 328 billion. The guarantee programme was extended during the spring, signifying that the banks have until 31 October 2009 to apply for participation. In addition, the programme was expanded so that a third of the total amount of no more than SEK 1 500 billion refers to debt securities with maturities of three or five years. By increasing the possibilities for long-term borrowing, the government contributes towards the reduction of the banks' liquidity risks. The longer maturities also imply that the fall dues of the loans are spread over a longer period, thereby reducing the number of loans requiring refinancing at the same time.

6 In addition to the Federal Reserve and the Bank of England, the Swiss National Bank and the Bank of Japan have also started to purchase domestic financial assets, while the ECB has announced that it also intends to do so.

7 See Sveriges Riksbank (2009), "Monetary Policy Update" April and Sveriges Riksbank (2009), "The monetary policy landscape in a financial crisis", speech by Stefan Ingves' speech of 31 March 2009 for an in-depth examination of monetary policy alternatives for financial crises and deflationary concern.

8 Swedbank, SBAB, Volvofinans and Carnegie, in addition to which SEB has joined but not yet issued.

Table 1:1. Non-conventional measures adopted by central banks up to and including spring 2009⁹

	Measures package	Announced	Structure
Federal Reserve	AMLF (Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility)	19 Sept 2008	Facilitates borrowing by eligible borrowers from the fund in order to purchase ABCP
	CPFF (Commercial Paper Funding Facility): facility for the purchase of commercial paper	7 Oct 2008	Special purpose vehicle (SPV) purchasing three month commercial paper
	MMIFF (Money Market Investing Funding Facility): facility for money market funds	21 Oct 2008	Five SPV:s purchasing money market instruments
	Purchase of MBS (Mortgage Backed Securities)	25 Nov 2008	The Federal Reserve purchases, from private participants, MBS:s backed by Fannie Mae, Freddie Mac and Ginnie Mae for up to USD 1.25 billion
	TALF (Term Asset-Backed Securities Loan Facility)	25 Nov 2008	Investors are offered the possibility of borrowing from the Federal Reserve against Asset-Backed Securities as collateral
	P-PIF (Public-Private Investment Fund)	10 Feb 2009	Fund providing non-recourse loans to investors, who purchase higher risk assets from the banks
	Purchase of Treasuries	18 March 2009	The Federal Reserve purchases up to USD 300 billion in long term treasuries with maturities of between two to ten years
Bank of England	APF (Asset Purchase Facility)	5 March 2009	The Bank of England purchases private sector assets for up to GBP 50 billion
	Purchase of Gilts	5 March 2009	The Bank of England purchases government bonds in an amount of no more than GBP 100 billion, with maturities of two to five years, by creating "new money"
Swiss National Bank	Purchase of EUR	12 March 2009	Purchases EUR on the foreign exchange market to counteract the strengthening of CHF
	Purchase of private sector assets	12 March 2009	

⁹ In addition to the measures listed in the table, the Federal Reserve, the European Central bank and other central banks have also entered into swap agreements to provide loans in their own currencies to other central banks in order to distribute USD, for example, thus mitigating the effects of the crisis in other countries.

In summary, major problems remain in areas of the international credit markets. Since the beginning of December, the situation on the interbank market has eased slightly and the interbank rates have fallen. However, the primary reason for this is the measures adopted by the central banks. Signs of increased possibilities for participants to secure funding on the bond market started to appear during the spring. In the early part of the year, the possibility of government guarantees, albeit at higher interest rates, largely lay behind the increased issuance volumes from financial institutions. However, during the second quarter, increasing numbers of corporates and financial institutions have been able to issue securities, even without government guarantees. Despite this, the lack of confidence between the financial participants remains unchanged, to a certain degree. This may be due to the fact that there still seem to be unrealised losses in the international banking system. Furthermore, additional capital infusion will probably be required in the future when the economic conditions deteriorate along with the economic downturn. In addition to this, the widespread unwillingness to take risks has led banks to choose to focus on the domestic market, preferring to only extend loans to borrowers in their traditional home market. This is forcing companies active on the global market to turn back to their domestic banks to raise loans.

What does the Riksbank's extra lending imply?

Many of the measures implemented by the central banks during the financial crisis are reflected in the banks' increased balance sheets. As an example, the Riksbank's assets and liabilities more than doubled between the end of September 2008 and 15 May 2009. What lies behind this development and how are the banks and their balance sheets affected? These issues are addressed in this box.

The measures adopted by the Riksbank have increased the balance sheet total

After the collapse of Lehman Brothers, the situation on the markets for short-term USD borrowing became very strained. Consequently, on 29 September 2008, the Riksbank announced a new loan facility in USD. By mid-May 2009, the Swedish banks' USD loans from the Riksbank amounted to almost SEK 200 billion (see Table B1.)¹⁰

At the start of October 2008, the Riksbank established a loan facility in SEK aimed at increasing the banks' access to credit with longer maturities. Subsequently, a facility was established to increase banks' capacity for providing loans to companies by offering the possibility to pledge commercial paper as collateral for credits with longer maturities from the Riksbank. By mid-May 2009, the Riksbank's monetary policy counterparties had borrowed a total amount of almost SEK 160 billion via these SEK facilities.¹¹

Lending in SEK and USD increased the total amount of the Riksbank's assets by around SEK 350 billion, more than half of which was accounted for by USD lending to the Swedish banks.

How has the Riksbank funded this increased lending?

In this respect, it is important to maintain a distinction between the funding of credits in

Table B1. The Riksbank's balance sheet, SEK billion

Assets	30-09-2008	15-05-2009	Liabilities	30-09-2008	15-05-2009
Gold	28	32	Banknotes and coins	106	106
Claims on residents outside Sweden denominated in foreign currency	235	188	Deposit facility	0	0
Claims on residents in Sweden denominated in foreign currency	0	197	Fine-tuning operations	0	127
			Riksbank certificates	0	29
Lending to monetary policy counterparties denominated in Swedish kronor	4	156	Liabilities to residents outside Sweden denominated in Swedish kronor	0	132
Other assets	1	9	Liabilities to residents outside Sweden denominated in foreign currency	65	59
			Other liabilities (revaluation accounts, etcetera)	38	65
			Equity capital	59	64
Total assets	268	582	Total liabilities	268	582

Source: The Riksbank

¹⁰ Included in the item "Claims on residents in Sweden denominated in foreign currency."

¹¹ See "Lending to monetary counterparties denominated in Swedish kronor."

SEK and credits in USD. As regards the credits in USD, approximately 70 per cent have been financed through the swap agreements entered with the Federal Reserve during the period. The swap agreements imply the purchase by the Riksbank of USD against SEK from the Federal Reserve, which thereby receives SEK which is placed with the Riksbank.¹² In order to avoid foreign exchange risk, a swap contract also includes a foreign exchange forward agreement. However, this is not evident from the balance sheet. The remaining portion of the USD lending has been funded through a reduction of the foreign exchange reserve.¹³

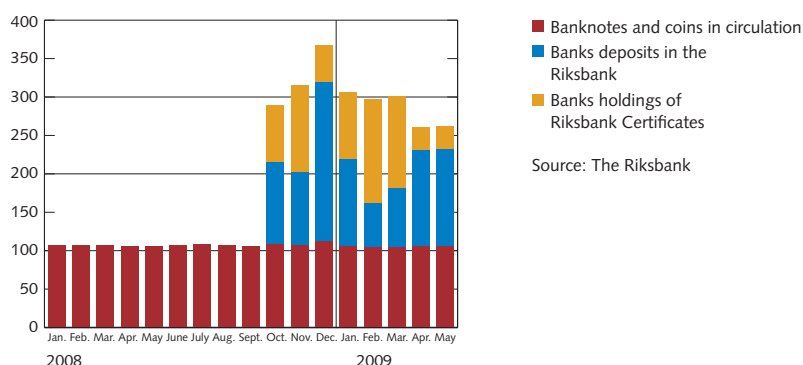
However, the Riksbank's SEK lending to Swedish banks is funded by itself. This takes place when the Riksbank places the SEK funds in the borrowing bank's account in the Riksbank, through a purely book-keeping measure. The possibility of thus creating money allows a central bank, in principle, to issue unlimited loans in its own currency. However, the loan facilities that the Riksbank has set up require collateral. A commercial bank's possibilities to issue loans are limited both by its ability to fund itself and by capital adequacy requirements.

Where does the money go?

The additional liquidity provided by the Riksbank is initially entered in the bank's deposit account with the Riksbank.

During this entire period, the banks have been offered the opportunity to place the liquidity created by the SEK lending in Riksbank certificates with a maturity of one week. The alternative has been to invest in a liquid deposit account at the Riksbank. Interest on the certificates is equivalent to the repo rate, while the interest on this particular overnight borrowing in the Riksbank has been equivalent to the repo rate minus ten basis points. Despite

Chart B1. The monetary base in Sweden
SEK Billion



Source: The Riksbank

the lower yield the banks have, most of the time, opted to invest a great portion of the liquidity in deposit accounts at the Riksbank¹⁴ so as to remain prepared to manage unexpected liquidity problems.

Individual banks can choose to utilise the funds they have placed in the Riksbank. For example, a bank may choose to lend money to another bank, purchase securities or pay due debts. In such a case, the liquid funds would be transferred to the other bank's account at the Riksbank - the system is closed. The banking system's placements in certificates and borrowing in the Riksbank do not decrease until the banks or the Riksbank choose not to renew due loans.

What effects has this lending had?

The monetary base is a concept that has been in focus recently as a result of the actions of the central banks. It is defined as the total of three liability items on the Riksbank's balance sheet: banknotes and coins in circulation, deposits¹⁵ in the Riksbank and certificates with short maturities in circulation. Before the Riksbank's crisis measures, the monetary base in Sweden almost entirely consisted of banknotes and

¹² The Federal Reserve's receivable in SEK is presented in the item "Liabilities to residents outside Sweden denominated in SEK." The forward agreement is not visible in the balance sheet.

¹³ "Claims on residents outside Sweden denominated in foreign currency" have decreased.

¹⁴ See "Fine-tuning operations" among assets in the balance sheet.

¹⁵ Deposit facility and fine-tuning operations on the liabilities side.

coins in circulation, which showed very stable development and seldom attracted any interest. Accordingly, the increase of the monetary base illustrated in Chart B1 reflects the increase in the banks' liquidity buffer in terms of SEK deposits in the Riksbank, arising as a consequence of SEK lending.

It is difficult, with the available statistics, to draw any certain conclusions regarding the impact on the banks and their balance sheets of SEK lending and the subsequent increase of the banks' liquid deposits in the Riksbank. One likely effect is that exposure between the banks has lessened due to reduced dependence upon the interbank market. When the interbank market is functioning well, Swedish banks normally do not need to place money in deposit accounts in the Riksbank in order to parry unexpected

fluctuations in payment flows. The Riksbank has now taken over a portion of the liquidity balancing that otherwise would have been mediated on the interbank market.

The Riksbank's USD lending, which were largely funded by the Federal Reserve, reduce the Swedish banks' need to find funding on the US market.

The central banks' measures to create liquidity have thus replaced a large portion of the funding previously mediated on the markets. The reduced liquidity premiums on the Swedish and overseas interbank markets observed since the end of 2008 probably reflect the reduced pressure on the markets following the takeover by the central banks of a portion of the mediation of loans between financial institutions.

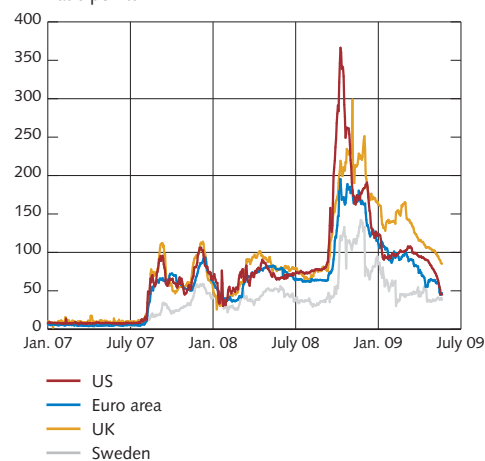
The development of the money market

A lack of confidence in the international credit markets remains. Both banks and investors are still reluctant in their lending activities, and the funding problems that arose during the previous year continue to be relevant. On the other hand, the most urgent liquidity crisis is over, at least for the time being. During the spring, the situation on the interbank markets eased slightly. The banks have started to lend again, to a certain extent, which is reflected by a reduction in their deposits at the ECB, for example. However, this is largely due to the fact that central banks have declared their willingness to continue lending to the banks to the extent required. Moreover, the interest rates that the banks apply towards one another, the interbank rates, have fallen significantly during the spring, partly as a consequence of the decrease of policy rates to very low levels by central banks around the world.

The difference between a three-month interbank rate and the expected policy rate (the basis spread) has fallen to levels prevailing before Lehman Brothers' collapse in September, amounting to approximately 40 basis points in the United States and 62 basis points in the euro area. Even if this is significantly lower as compared with last autumn, the difference continues to be greater as compared with the period immediately preceding the crisis (see Chart 1:2). For maturities longer than one month, the functioning of the money market continues to be impaired. The majority of banks are still retaining liquidity on their own balance sheets. This implies that transactions taking place with longer maturities are small and irregular. This confirms the view that confidence has still not returned to the financial markets and that the interbank markets are being sustained by the measures adopted by the central banks. The central banks will be the most important source of funding as long as the concern regarding actual counterparty risk remains.

Sharp interest rate cuts have contributed to lower interbank rates also in Sweden. Since December, the Riksbank has lowered its repo rate from 3.75 to 0.5 per cent. This has contributed to returning the basis spread in Sweden to the levels prevailing before Lehman Brothers' collapse, i.e. just under 40 basis points. The difference, however, remains greater than before the start of the crisis in 2007. During the spring, the Riksbank has continued to provide liquidity through auctions for SEK and for USD, with maturities of three and six months. Even if these auctions have not been fully subscribed, they provide confidence in the sense that the market participants know that liquidity is available, should it be needed. This has also contributed to the slight easing of the situation on the Swedish interbank market. However, this applies primarily to short-term maturities, in which turnover is reported to be satisfactory, even if it does not reach the levels prevailing before September, when the crisis started to seriously affect Sweden.

Chart 1:2. Three-month interbank rate relative to expected policy rate
Basis points



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

Source: Bloomberg

Turnover on the repo market¹⁶ continues to be low in the United States and Europe. The reduced turnover on the repo market is partly due to the decline in lenders willingness to lend risk-free securities during the financial crisis. Instead, lenders have offered other securities, for example Asset-Backed Securities, which borrowers have considered to be too risky. For example, there are no repo transactions taking place with mortgage bonds with low credit ratings. A further factor that has affected turnover in the United States is the increasing number of failed transactions, where the government bonds borrowed were not returned to the lender on time. As the financial crisis deepened, demand for government bonds increased strongly and interest rates fell, meaning that interest rates on repo transactions also decreased. For those parties who had borrowed government bonds, a situation arose in which it was costly to return these government bonds. The fee payable by the borrower in the event of failure to return a bond became lower than the price gain that could be realised in a sale of the security. This situation has led to the increase of fees. The Federal Reserve has set up a new clearing house in order to reestablish confidence in the repo market.

Turnover has also declined significantly on the Swedish repo market during the crisis. The decreased turnover of the Swedish repo market is primarily due to agents' reduction of speculative activities in repo transactions. One reason for this is that Swedish banks, just like those overseas, have greater restrictions for balance sheet exposure than was the case previously.¹⁷ Consequently, activities have been concentrated on repo in a security in order to follow through on delivery of securities it has sold. Another reason is that foreign interest in Swedish bonds has markedly decreased. In addition, foreign participants, such as hedge funds, which previously acted on this market, have almost entirely abandoned it. On the other hand, the problem of borrowers failing to return government bonds has not arisen, as there are strong incentives to prevent such market failures in Sweden. This is partly because institutions must pay a fine to Euroclear Sweden in such cases. However, possibly more important is the fact that the Swedish repo market consists of a small number of agents and that reputational cost is, consequently, high. Pricing on the repo market has also changed and the cost of refinancing securities loans has increased significantly since September.¹⁸

¹⁶ The repo market plays an important role for financial institutions' ability to secure funding over short maturities. Additionally, financial market participants can use the repo market to speculate on interest rate fluctuations. A repo transaction refers to the purchase or sale of a security, usually a government bond, in combination with an agreement regarding repurchase at a predetermined date. The legal right to the security accompanies a repo transaction. This signifies that the party borrowing the security (the borrower) holds the right to the security in the event that the lender should default, which reduces counterparty risk. At the same time, a repo transaction imply that the party lending the security (the lender) can use securities from its own portfolio to borrow liquidity at a lower rate than that offered by the interbank market.

¹⁷ When a repo transaction is carried out, the amount is recognised as a new asset on the balance sheet.

¹⁸ That is to say, that the interest rate on repo transactions is now even further below the Riksbank's policy rate. According to market makers, certain interest rates for repo transactions can be almost 30 basis points lower than the policy rate, compared with previously, when they were, at most, 15 points lower.

The commercial paper market in the United States and Europe is an important source of funding for Swedish banks and companies.

These markets are significantly larger than their Swedish equivalent. Consequently, Swedish companies have traditionally issued commercial paper on the international market to a greater extent than on the Swedish market. In the United States, the market for commercial papers has functioned slightly better recently, as compared with last autumn. To a certain extent, this is an effect of the programmes set up by the Federal Reserve for the purchase of commercial paper (CPFF and AMLF). Furthermore, the heavy outflow of money from US money market funds investing in commercial paper has ceased and demand has increased. However, the Federal Reserve's facilities are starting to become a more expensive alternative, compared to funding directly on the market, and, consequently, the multitude of outstanding commercial paper in the United States have stabilised on a lower level, as issuers have opted not to renew the certificates upon maturity (see Chart 1:3). At the same time, financial institutions have been able to issue commercial paper with a government guarantee from the Federal Deposit Insurance Corporation (FDIC). Statistics from the market for Euro Commercial Paper (ECP) pointed to some recovery at the start of the year. Since then the outstanding volume of ECP has decreased somewhat (see Chart 1:4). The lower volumes can partly be explained by an overall reduction in economic activity by companies due to the economic slowdown. It could also be due to the fact that several financial institutions have attempted, as far as possible, to issue securities with longer maturities. Certain of these have also been able to issue government guaranteed securities.

The development of the bond market

Since the publication of the previous Financial Stability Report, government bond yields in the United States and Europe have increased, but remain at low levels. One important reason for the increased yields is that the government budgets of several countries now have growing deficits, partly as a consequence of the various support measures adopted in respect of the financial crisis. Following the start of the year, this has led governments in the United States and Europe among others to issue large volumes of government bonds to finance these deficits. The fall in long-term government bond yields at the end of last year has thus been halted (see Chart 1:5).¹⁹ This development has also been apparent in Sweden, where long-term government bond yields also increased since the last stability report was published (see Chart 1:6). However, bond yields remain at low levels, which, apart from the economic slowdown, is due to the fact that investors are demanding these safe assets. On the other hand, investors are increasingly making distinctions between different

Chart 1:3. Outstanding volumes in US commercial paper
USD, billions

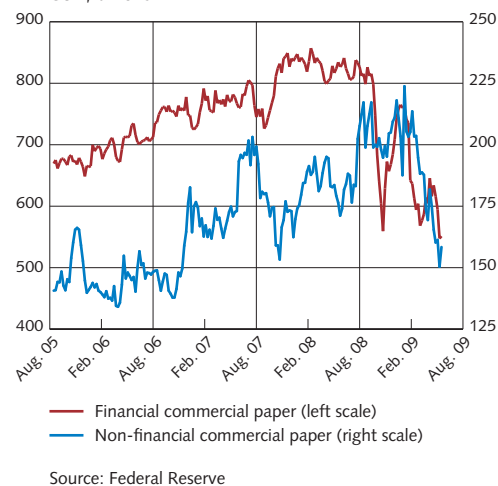


Chart 1:4. Outstanding volumes of EUR commercial paper
USD, billions

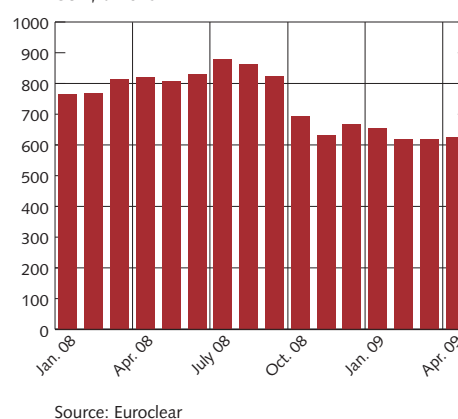
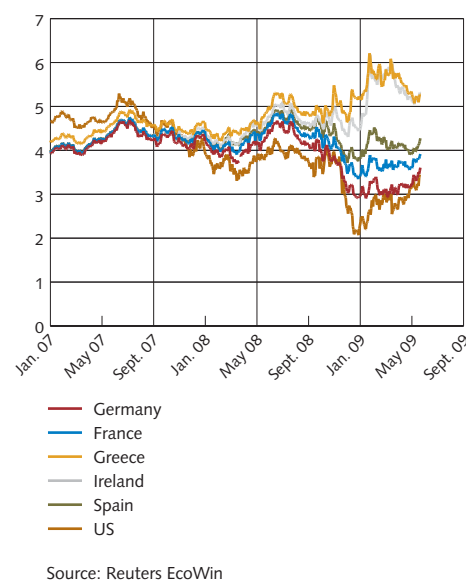
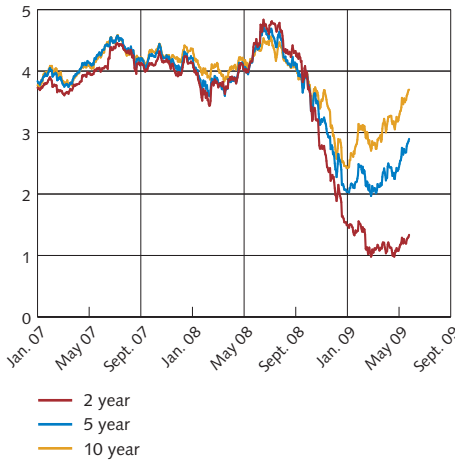


Chart 1:5. Ten-year government bond yields in various countries
Per cent



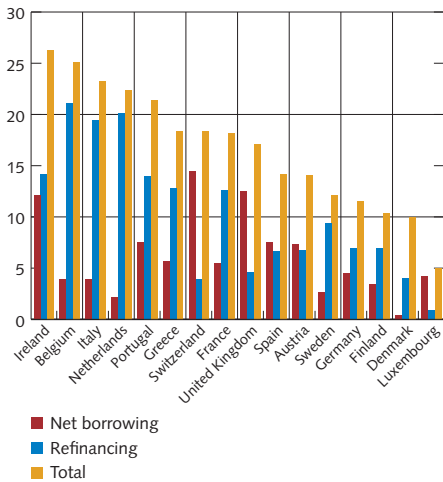
¹⁹ An increased supply implies a decrease in the price of bonds and consequently an increase in bond yield.

Chart 1:6. Swedish government bond yields
Per cent



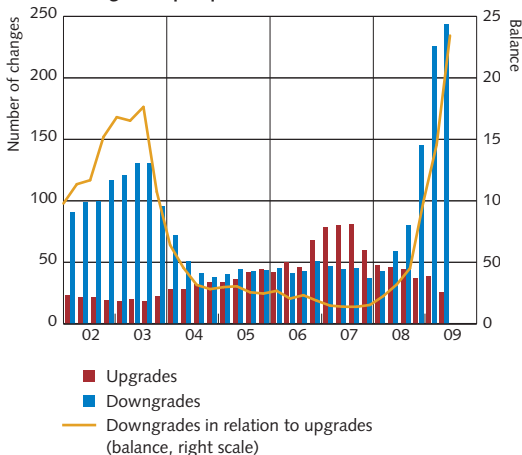
Source: Reuters EcoWin

Chart 1:7. European countries' borrowing requirements 2009, as a percentage of GDP



Source: FitchRatings

Chart 1:8. Standard & Poor's upgrades and downgrades, per quarter



Note. Downgrades and upgrades refer to investment grade ratings for companies, countries and bonds.

Source: Bloomberg

countries' government bonds and a certain degree of concern exists as regards the strongly increased supply. Furthermore, during 2009, several countries will need to refinance their previous borrowings, and borrowing requirements in almost all European countries are expected to increase during 2009 (see Chart 1:7). In countries with greater uncertainty regarding government finances, government bond yields have increased. This is the case for Ireland and Greece, for example (see Chart 1:5). However, central banks' purchases of government bonds may contribute towards keeping interest rates down.²⁰

During the early months of 2009, large volumes of corporate bonds were issued in the US and Europe. Investment grade bonds of a value of almost USD 460 billion have been issued on the US market so far this year. In the euro area and United Kingdom this figure amounts to over EUR 360 billion.²¹ A major portion of these were issued during the first quarter. To a large extent, this is an effect of financial institutions' ability to issue bonds with government guarantees at the same time as there has existed an unfulfilled need among companies to obtain new funding by issuing bonds. Almost 40 per cent of the volumes of corporate bonds issued in the United States and Europe have had government guarantees. Of the bonds issued, the majority have been issued by companies and financial institutes with investment grade rating²² of which financial institutions represent almost half of the total volume. During the second quarter, the situation on the corporate bond markets has improved slightly. A few financial participants have succeeded in issuing bonds with longer maturities, without government guarantees.²³ Furthermore, companies with high yield ratings have been able to obtain funding. This can be interpreted as reflecting increased demand for investments entailing higher risk. During the winter and spring, credit rating institutions have lowered their credit ratings for several companies, countries and bonds, which may result in increased difficulties in finding funding (see Chart 1:8). However, so far, downgrading has primarily affected companies with high credit ratings, which have been downgraded within their investment grade. However, the proportion of companies being moved downwards from investment grade to high yield is small.

Large volumes of corporate bonds with government guarantees have also been issued in Sweden by financial institutions. So far this year, bonds with a value of SEK 133 billion have been issued, almost 40 per cent of which have government guarantees.²⁴ Financial institutions

20 In addition to the Federal Reserve and the Bank of England, the Swiss National Bank and the Bank of Japan have also started to purchase domestic financial securities. The ECB has also signalled that it will start to purchase securities.

21 See J.P. Morgan (2009), "Weekly Liquidity Update", 15 May.

22 Investment grade means credit ratings of BBB- or higher, according to Standard & Poor's definition, or Baa or higher, according to Moody's definition.

23 For example, JP Morgan has issued a ten-year bond without government guarantee, while Goldman Sachs has similarly issued a five-year bond without government guarantee.

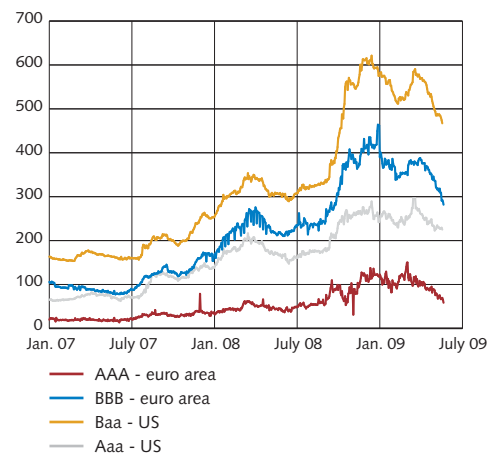
24 This refers to bonds issued by corporates, non-financial institutes, state companies, municipalities and bonds issued by financial institutions that are not included in mortgage institutions' benchmark programmes.

have also dominated the offering of bonds without government guarantees, although state-linked companies have also issued relatively large volumes. Swedish companies, without a link to the government, that have issued bonds denominated in SEK have all been investment grade companies. Even if large volumes have been issued recently, in the Riksbank's latest company interviews, many companies report that the funding situation is strained (See the box The effects of the financial crisis upon companies' funding possibilities).²⁵ The yields on the bonds issued have often been relatively high, implying that companies have been prepared to accept a high cost to obtain capital.

The difference between the corporate bond yield and the yield on government bonds, the credit spread, remains high (see Charts 1:9 and 1:10). This is particularly apparent for high yield corporate bonds. Above all, the high credit spreads indicate that investors are concerned about the effects of the economic downturn upon companies. This primarily refers to the development of companies' earning capacity and credit quality. This concern is reflected by strong expectations that the number of defaults will increase globally. In April, the global default rate amounted to 8.3 per cent, which can be compared with the record low level of defaults prevailing at the end of 2007 (see Chart 1:11).²⁶ Furthermore, forecasts made by credit rating agencies indicate that the default rates will increase sharply henceforth.

The market for covered mortgage bonds in Europe still functions unsatisfactory.²⁷ During the winter and spring, almost no trading at all has occurred on this market. One reason for this, apart from investors moving to more safe assets, may be that the legislation surrounding covered bonds and defaults differs between countries. This implies that there exists uncertainty regarding which regulations apply to defaulted payments, which entails problems for market makers in the pricing of bonds.²⁸ In addition to this, European banks have only executed a small number of issues of covered mortgage bonds, for which the issuers have had to pay high interest rates. In many cases, government-guaranteed bonds have replaced covered mortgage bonds, which risk being substituted by the rapidly-growing supply of government-guaranteed bonds. The ECB's announcement that it intends to purchase covered mortgage bonds may possibly be expected to contribute to the increase of issue volumes.

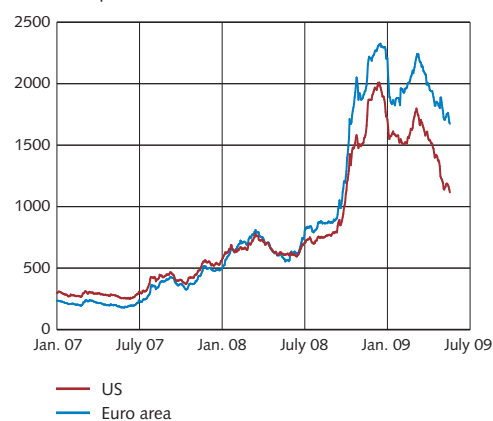
Chart 1:9 Credit spreads for corporate bonds in the United States and the euro area
Basis points



Note. Definition according to Moody's and Standard & Poor's.

Source: Reuters EcoWin

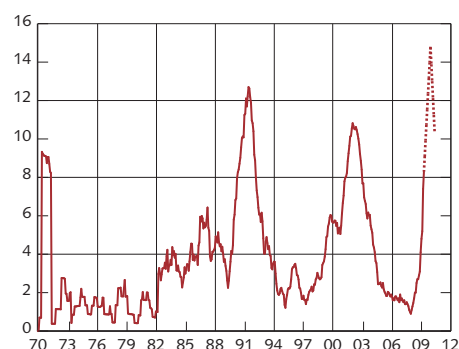
Chart 1:10. Credit spreads for high yield corporate bonds in the United States and the euro area
Basis points



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. Global default rate, actual and forecast
Per cent



Note. The chart refers to the proportion of companies classified as Ba/BB or lower by Moody's/Standard & Poor's defaulting, as the majority of total defaults take place among companies with this classification.

Source: Reuters EcoWin

25 See Sveriges Riksbank, "The Riksbank's company interviews, December 2008-January 2009," www.riksbank.com.

26 See Moody's Investor Service (2009), "April Default Report", 8 May 2009.

27 For more information, see the box "Swedish covered bonds" in the Financial Stability Report 2008:2.

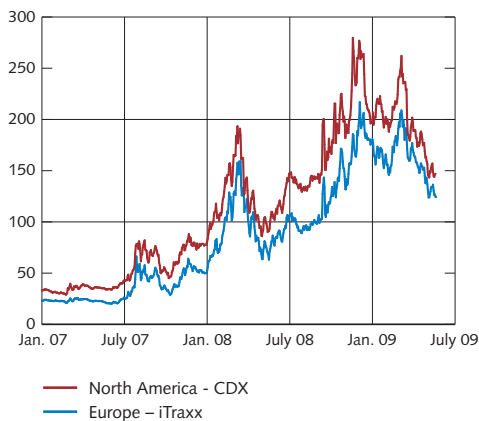
28 According to market practice, brokers on the European market for covered mortgage bonds should always quote buy and sell prices on the basis of a specific spread between these. The increased uncertainty is normally reflected by increasing the spread between buy and sell prices, which did not function in the euro area.

Chart 1:12. Difference between mortgage bond yield and government bond yield with two and five years maturity respectively
Basis points



Sources: Reuters EcoWin and the Riksbank

Chart 1:13. Premiums in the CDS index
Basis points



Note. The indices for North America and Europe are represented by CDX and iTraxx respectively in underlying bonds with a credit rating BBB or higher, according to Standard & Poor's definition. The maturity for these is five years.

Sources: Reuters EcoWin and Bloomberg

In Sweden, trading in covered mortgage bonds functions relatively well.²⁹ This is largely due to the changes implemented during the autumn, when demand for mortgage bonds fell sharply. Among other resolutions, the Riksbank decided to accept mortgage bonds as collateral for loans to a greater extent than previously. Additionally, market makers reduced the size of the posts traded from SEK 100 million to 10 million and expanded the difference between buy and sell price from two to eight basis points, with the objective of maintain trading. However, the possibilities to issue mortgage bonds have continued to be low. The issuance by mortgage institutions on the Swedish market have been minor, and most have concerned shorter maturities. It has only been possible to carry out a couple of issues on the European market.

The difference between mortgage bond yields and the yield on government bonds has stabilised on a higher level. The mortgage bond yields has developed in line with the government bond yields and the difference is now approximately 100 basis points. During the autumn, the difference amounted, at most, to almost 200 basis points in comparison with 10-30 basis points prior to the crisis (see Chart 1:12). Swedish mortgage bonds are among those with the world's highest credit ratings. However, the credit rating agencies Standard & Poor's, Moody's and Fitch have proposed changes to the manner in which credit ratings for mortgage bonds are determined, which may eventually have an effect on yields and demand for Swedish mortgage bonds.³⁰

It continues to be very expensive to protect against credit risk in corporate bonds. This is reflected by the continued high premiums on Credit Default Swaps (CDS), which measure the credit risk in a company's underlying assets (see Chart 1:13).³¹ Above all, this applied to CDS premiums for financial institutions. Uncertainty surrounding the economic situation and continued existence of financial institutions has contributed to keeping their CDS premiums at these high levels. These major changes in the premiums have raised the issue of counterparty risks in these instruments. In order to reduce this risk in trading with CDSs, during the winter, the US and European legislators have worked on developing a proposal in order to stabilise this market. For the same purpose, the major participants on this market have agreed on a global standard, drawn up by the International Swaps and Derivatives Association (ISDA). One of the most important changes is the introduction of a clearing house in both the United States and Europe as a central counterparty (see Chapter 4).³² This entails a

²⁹ Here and in the following paragraphs, the term mortgage bonds refers to covered mortgage bonds, as these dominate the Swedish market for mortgage bonds.

³⁰ See Sveriges Riksbank (2009), "The Riksbank's response to Standard & Poor's proposed change in credit rating process for covered bonds", www.riksbank.com.

³¹ For a more detailed review of different types of credit derivative, see the article "Trading activity in credit derivatives and implications for financial stability" in Financial Stability Report 2006:2.

³² In the United States, the central counterparty has already entered into service, being managed by Inter-Continental Exchange (ICE).

reduction in counterparty risk for both buyers and sellers. In addition, an international standardisation of the issue of CDS contracts has been determined.

International banks are reducing their activities in emerging economies, which are being seriously impacted by the financial crisis. During the early phases of the crisis, it was discussed to which extent parts of the world other than the United States and Europe would be affected. It is now clear that the financial crisis and economic slowdown are also having a severe impact upon many emerging economies (see the box Developments in Eastern Europe). There are a number of reasons for this, including the heavily deteriorated prospects for exports. Another important reason is the fact that many banks have scaled down their operations in other countries to focus on the domestic market instead. Above all, this affects emerging economies, in which economic development, in many cases, is dependent upon foreign capital. As foreign portfolio investments have declined for several quarters, the influx of trade credits and other banking flows have also declined for several emerging economies during the fourth quarter of 2008. This will probably lead to a decrease in the lending to companies in these countries, which, in turn, impedes economic growth. The decreased risk propensity also impedes foreign investors' interest in emerging economies, which has led to low demand for bonds from these countries. Only countries with high credit ratings have succeeded in issuing bonds. However, premiums have been high for these bonds. During the spring, certain indications of a turnaround have also been seen here, as foreign investors are now showing increased interest. For example, in Latin America, foreign investment in domestic bonds increased during February and March.

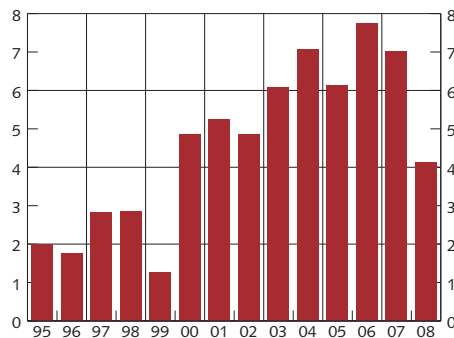
Developments in Eastern Europe

Following several years of very strong economic growth for the countries of Eastern Europe, the trend has now changed, with rapidly falling growth in several countries. Developments in Eastern Europe are significant for the financial stability of many Western European countries, as Western European banks contributed to this economic upswing with extensive loans. In certain cases, lending has been so extensive that exposure to Eastern Europe is now equivalent to a significant portion of the GDP of the countries in question. This implies that current developments entail the risk of significant loan losses for Western European banks, at the same time as a decision by foreign banks to withdraw could have major negative consequences for the region.

The economic outlook for Eastern Europe is deteriorating rapidly

Between 2003 and 2007, Eastern Europe experienced accelerated economic growth as a consequence of the strong global business cycle, low risk premiums and good access to liquidity on the international capital markets (see Chart B2).³³ Growth here was primarily due to the rapid increase of private, domestic demand, which was funded by foreign loans. Since the end of 2008, the outlook for Eastern and Central Europe has deteriorated rapidly. This deterioration is partly due to the fact that the financial crisis has put an end to the major flows of capital which financed the rapid increase in domestic demand, and partly due to the fact that several countries, as small, open economies, have been severely affected by the declining volumes in world trade. However, it is important to remember that Eastern Europe is not a homogenous economic unit and that there exists a great divergence between these countries as regards growth prospects for 2009–2010. In general, it seems that the countries experiencing the fastest growth between 2003–2007, and where overheating was most severe, are the countries that will be impacted hardest (see Chart B3). One complication in this context is due to the fact that, in certain countries, it was common for the private sector to raise loans in foreign currency. This implies that interest expenses for households and companies have increased concurrently with the depreciation of currencies in several Eastern European countries (see Chart B4).

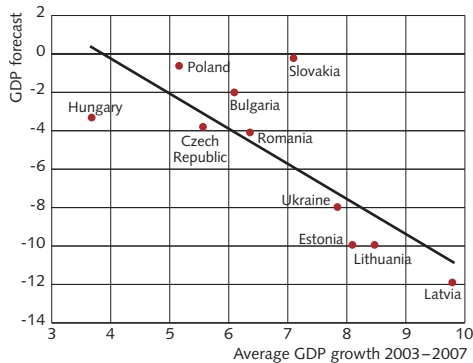
Chart B2. GDP in Eastern Europe
Annual percentage change



Note. GDP growth is calculated as an unweighted average of the annual GDP growth of the countries listed in the footnote below.

Sources: The IMF and the Riksbank

Chart B3. GDP 2003–2007 and IMF forecast for 2009
Annual percentage change



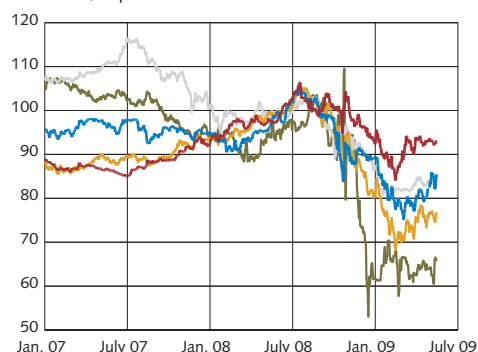
Sources: The IMF and the Riksbank

33 The term Eastern Europe refers to Estonia, Latvia, Lithuania, Poland, the Czech Republic, Slovakia, Hungary, Romania, Bulgaria and Ukraine.

Several countries have been compelled to apply for support from the IMF

During the financial crisis, many countries have been affected by the flight of capital, liquidity problems in the domestic banking systems and difficulties in refinancing foreign debt. In several cases, this has implied such great pressure on the financial system that these countries have applied for loans from the International Monetary Fund (IMF). Most measure packages introduced in the Eastern European countries are 'Stand By Arrangements' (SBAs) (see Table B2). In order to borrow under a SBA programme, the country must comply with conditionality, that is strictly defined conditions regarding the formulation of financial policy etc. However, the depth of the financial crisis has also impacted Eastern European countries that previously conducted a restrained economic policy and

Chart B4. Exchange rates against EUR
Index, September 2008=100



— Czech Republic
— Hungary
— Poland
— Romania
— Ukraine

Note. The scale is inverted so that lower values indicate weaker exchange rates.

Source: Reuters EcoWin

that had not experienced any comprehensive economic overheating, for example Poland. In order to rapidly provide such countries with external investment aid, the IMF has established a new facility, Flexible Credit Line (FCL), which implies that, when necessary, countries with very sound basic conditions may borrow money from the IMF without conditionality.

Table B2. Compilation of IMF European measures packages

	Starting date	Size of programme USD billion	Size of programme Percentage of recipient country's GDP 2008	Type of programme
Iceland	19 Nov. 2008	4.6	26.2%	SBA 24 months
Latvia	23 Dec. 2008	10.5	30.8%	SBA 27 months
Serbia	16 Jan. 2009	0.5	1.0%	SBA 15 months
Ukraine	5 Nov. 2008	16.4	16.3%	SBA 24 months
Hungary	6 Nov. 2008	15.7	9.1%	SBA 17 months
Poland	6 May 2009	20.5	3.9%	FCL 12 months
Belarus	12 Jan. 2009	2.4	4.0%	SBA 15 months
Romania	14 May 2009	26.4	13.2%	SBA 24 months

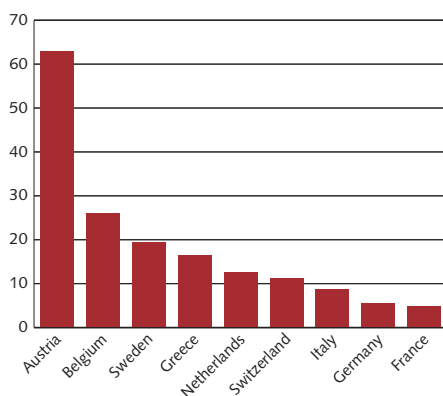
Note. The amount of the investment aid is determined in terms of the IMF's arithmetical units, 'Special Drawing Rights' (SDR). The amounts stated for the packages also include unilateral and multilateral contributions.

Sources: IMF and the Riksbank's calculations

Western European banks are exposed to Eastern Europe

Developments in Eastern Europe are significant for the financial stability of many Western European countries. The reason for this is that the previously extensive current account deficits in Eastern Europe were largely funded by loans from banks domiciled in countries such as Sweden, Belgium, Austria, Italy and Greece. In certain cases, lending from the banks was so extensive that exposure to Eastern Europe is now equivalent to a significant portion of the GDP of the home countries (see Chart B5).

Chart B5. Exposure to Eastern Europe, as a proportion of host country's GDP 2008
Per cent



Note. Eastern Europe includes, in addition to the countries named in footnote 33, Albania, Belarus, Bosnia and Herzegovina, Macedonia (FYROM), Moldavia, Montenegro, Russia and Serbia.

Sources: BIS and IMF

Even if observers are agreed that growth prospects in Eastern Europe 2009 – 2010 have deteriorated, disagreement prevails regarding the exact weakness of future economic development. The occurrence of a more negative scenario would entail major loan losses for many of the Western European banks active in Eastern Europe. Comprehensive loan losses from the banks' Eastern European operations would impact the banking groups' capital adequacy and financing expenses. In turn, this could entail poorer and more expensive access to credits for households and companies in the banks' home countries. Over the long run, this could also have consequences for government finances, if government capital injections become necessary to recapitalise banks that have incurred major losses in their Eastern European operations.

At the same time, it would have very serious consequences for the region if the foreign banks active in Eastern Europe choose to withdraw. If Western European banks rapidly would decrease their exposure to the region, it could lead to an even more rapid fall in domestic demand, to exchange rates weakening and to loan losses increasing further. Furthermore, in most cases, the Eastern European states lack the fiscal capacity to implement the measures adopted by several Western European countries to secure the supply of credit to households and companies, such as guarantee programmes and government-sponsored capital injections. A radical reduction of the foreign banks' presence in Eastern Europe, therefore, could potentially entail a collapse in the supply of credit in the region.

Developments on the stock market

Stock markets around the world have been characterised by continued high uncertainty and volatile share prices (see Chart 1:14). However, since mid-March, share prices have risen again. Price movements have been large, which also reflects great uncertainty concerning the manner in which companies are affected by the economic downturn. This is illustrated by the high implied volatility (see Chart 1:15).³⁴ At the same time, uncertainty continues to prevail regarding future developments for financial institutions, where concern over loan losses in the wake of the crisis has played a major role in developments. The economic slowdown has also impacted the valuation of companies in terms of P/E ratios which remain at low levels, far below the historic average prevailing since 1996 (see Chart 1:16).³⁵

As in the United States and Europe, uncertainty on the Swedish stock market has been high. The economic slowdown is reflected in companies' profits, which by April 2009, had decreased by eleven per cent, compared with April 2008. Despite this, market participants expect profits to rise, going forward.³⁶ However, uncertainty regarding companies' future earnings remains high. The low P/E ratios also indicate a low valuation of the companies, which may indicate that shareholders' required rates of return may have increased faster than the increase in profits expected by the market. This can in turn be explained by uncertainty, measured in terms of implied volatility, being substantial during the early months of the year.

The foreign exchange market

Since the autumn of 2008, the USD has weakened, due to the strong measures implemented by the Federal Reserve. The Federal Reserve lowered its policy rate to almost zero in December, which was sooner than market participants had been expecting. This led to a heavy weakening of the USD. The US currency subsequently became stronger, as it is usually regarded as a safe-haven asset during periods of high uncertainty. However, the USD drastically weakened again in conjunction with the announcement by the Federal Reserve in March that it was to start buying domestic securities.

The Swedish krona remains largely unchanged against the euro and the dollar, compared with November, although the exchange rate has fluctuated substantially during the period. The financial crisis and the global economic downturn have led investors to abandon smaller

Chart 1:14. Stock market developments
Index, 28 December 2007=100

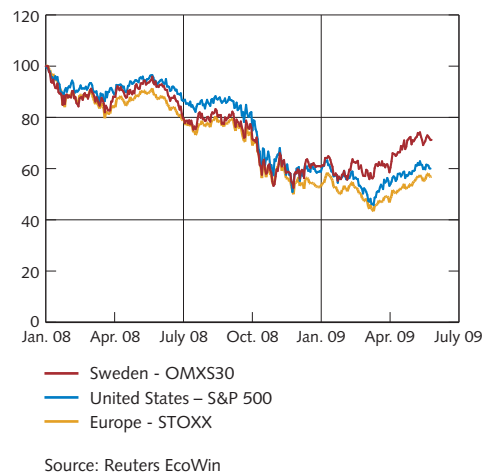


Chart 1:15. Implied stock market volatility
Per cent, 10 day moving average

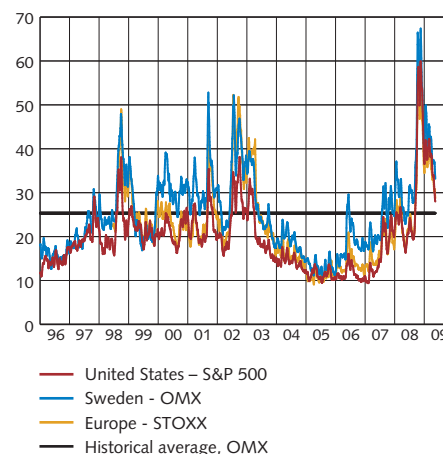
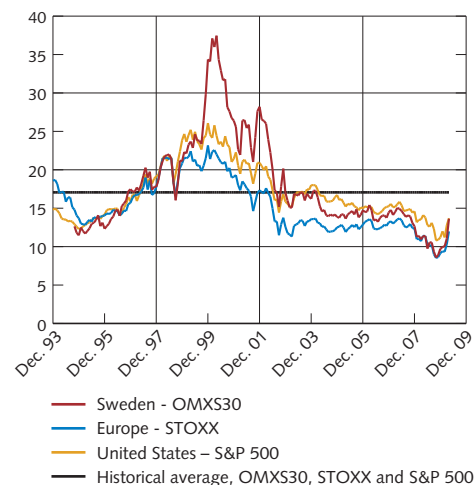


Chart 1:16. P/E ratios



³⁴ Implied volatility describes the market participants' expectations of future variations in share prices and is calculated from stock option prices.

³⁵ The P/E ratio (price/earnings) relates the price of equity to the expected earnings.

³⁶ The profits of the 70 largest companies listed on the OMX are expected to decrease by eleven per cent from 2008 to 2009, and subsequently rise by 16 per cent until 2010, according to the SME database in April 2009.

currencies in favour of larger currencies, which are considered as more liquid assets. This has also impacted the krona. It is also reflected in the responses to the Riksbank's most recent risk survey, where market participants state that the foreign exchange market has functioned worse during the past six months than during the periods covered by the earlier surveys. At the same time, the liquidity in kronor is said to have been uneven both on the spot and futures markets. However, the responses are coloured by the situation prevailing in the Swedish foreign exchange market during the late autumn and at the end of 2008, and several respondents state that liquidity has improved since the beginning of the year (see Swedish market participants' views of risks and the functioning of the Swedish markets). The flight to quality has also affected currencies in, for instance, eastern Europe. For example, the Hungarian forint has fluctuated substantially against the euro since the start of the year. Even though Hungary has received a support package from the IMF, it remains uncertain whether the currency has successfully been stabilised. The Latvian currency, the lat, is another example of a currency that has been placed under heavy depreciation pressure. The lat is linked to the euro and has periodically been traded close to the ceiling of the band within which the currency may fluctuate against the euro. In order to maintain the fixed exchange rate, the Latvian central bank has implemented large-scale pegging purchases of the lat.

Summary of risks for the financial markets

The financial system remains sensitive towards unexpected events.

Although measures implemented by authorities are ensuring that the banks' supply of liquidity functions, lack of confidence among financial institutions continues to be extensive. Confidence cannot return until the banks have adapted their capital situation to the prevailing circumstances. However, despite the fact that the banks, through a combination of government support and shareholders' contributions, have managed to obtain over USD 950 billion in new capital, it remains uncertain whether this will be sufficient to cope with further loan losses or write-downs. So far, write-downs and losses for the banks amount to just over USD 1,000 billion worldwide, with the total amount for all types of financial institutions being almost USD 1,400 billion. Forecasts from the IMF and market participants indicate that total write-downs and losses in financial institutions may amount to between USD 3,600 and 4,100 billion.

At the same time, both globally and in Sweden, economic activity is slowing down and there is a great deal of uncertainty about the future. An economic slowdown usually implies an increase in delinquencies and loan losses, and that the banks become more cautious in their lending activities to companies and households. In order to protect against increased loan losses, or to create a capital base

in order to gain market's confidence, the banks must choose whether to provide additional capital or to reduce their balance sheets, that is to say cut back on their business. The ongoing strained situation on the financial markets makes it difficult for the banks to increase their capital bases. Consequently, there exists a risk that the Swedish banks will also need to reduce their risk-weighted assets. Hence, there exists the risk of a credit crunch impacting households and companies that are basically creditworthy. Such a development would further worsen the economic prospects. In such a situation, there would be a risk that investors would become even more cautious and that funding problems would again be increased.

Increased state risk may lead to higher interest rates. The measures adopted by the countries to reduce the negative effects of the financial crisis and the real economic downturn have contributed to growing budget deficits in several countries. At the same time, unemployment has increased and companies' profits have declined, which is reducing the tax base. This has entailed that the countries must increase their borrowing, that the supply of government bonds is increasing and that interest rates are rising. If the financial and real conditions continues to deteriorate, there exists a risk that government bond yields will rise even more henceforth, particularly if credit rating agencies consider that there exists reason to downgrade countries on the basis of central government finances.

The Riksbank's new measures³⁷

20-11-2008	The Riksbank extends the swap agreement with the Icelandic central bank. This swap agreement entails the Icelandic central bank being able to borrow up to EUR 500 million in exchange for Icelandic kronor.
16-12-2008	The Riksbank and Danmarks Nationalbank sign a swap agreement with the Latvian central bank. This agreement entails the Latvian central bank being able to borrow up to EUR 500 million in exchange for Latvian lats. The Riksbank's share of the loan is calculated to be EUR 375 million.
03-02-2009	The Riksbank, together with many other countries, extends its swap agreement with the Federal Reserve. These agreements mean the countries can borrow US dollars in exchange for other currencies.
13-02-2009	The Riksbank offers loans at longer maturities at a variable interest rate. The loans are granted both against ordinary collateral for up to six months, and against collateral in the form of commercial paper for up to 12 months.
27-02-2009	The Riksbank signs a swap agreement with the Estonian central bank. This agreement entails the Estonian central bank being able to borrow up to SEK 10 billion in exchange for Estonian kronor.
27-03-2009	The Riksbank gets back the liquidity assistance paid to Kaupthing Bank in connection with Ålandsbanken acquiring Kaupthing Bank Sverige.
03-04-2009	The Riksbank extends the eligible counterparties by giving further financial institutions the opportunity to become restricted counterparties. Restricted counterparties are given access to the Riksbank's temporary credit facilities.
07-05-2009	The Riksbank offers twelve-month loans in Swedish kronor against collateral.
08-05-2009	The Riksbank extends the swap agreement signed with the Latvian central bank, Latvijas Banka, in December 2008.
27-05-2009	The Riksbank strengthens the currency reserve by borrowing the equivalent of SEK 100 billion.

³⁷ For a complete list of all measures implemented by the Riksbank, refer to the Riksbank's website, www.riksbank.se.

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

At the same time as risk propensity has increased slightly among market participants, liquidity is experienced as poor in most submarkets. Overall, the Swedish fixed-income and foreign exchange markets are still considered to function poorly. However, a number of participants consider that the Swedish fixed-income market has functioned relatively well, compared to markets in the rest of the world. This is apparent from the results of the Riksbank's risk survey, which is forwarded to participants in the Swedish fixed-income and foreign exchange markets every six months. The purpose of the survey is to obtain an overall picture of the view of risk among participants active in these markets. It also aims to provide an idea of the participants' views on the functioning of the markets.³⁸

Below is presented the result of the risk survey answered during April 2009.³⁹ The survey was distributed to 73 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 81 per cent.

Risk propensity has increased slightly

In the two latest surveys carried out by the Riksbank, the participants on the Swedish fixed income and foreign exchange market have displayed a clearly declining willingness to take risks. In the most recent survey, just over 70 per cent of respondents stated that their risk propensity had decreased, while 20 per cent described it as unchanged. This trend was broken in this spring's survey, in which just over one-third of respondents stated that their risk propensity had increased during the most recent six months (see Chart B6). However, one third of respondents stated that their risk propensity

was unchanged, and one third stated it had decreased over the most recent six months. The answers indicate a certain increase in risk propensity during the period, but indicate at the same time that many participants still feel great uncertainty. 35 per cent of respondents believe that their willingness to take risks will increase over the next six months, and a majority, almost 60 per cent, believes that their risk propensity will remain unchanged. Only four 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. Compared with the autumn's survey, a greater proportion of respondents in the spring's survey state that their institution has increased its buffer of liquid assets, despite a slightly increased willingness to take risks (see Chart B7). Almost half of the respondents stated that their institute had increased its liquidity buffer during the last six months, compared to just over one third last autumn. Additionally, 20 per cent responded that their institute's liquidity buffer was unchanged, while an approximately equally-sized portion stated that it had decreased. Approximately half of the respondents believe that their buffer of liquid assets will remain unchanged over the coming six months, while 21 per cent and 17 per cent respectively believe it will decrease or increase.

Liquidity is considered to have been poor in most submarkets

This spring's risk survey indicates that the Swedish fixed-income and foreign exchange market is considered, on the whole, to have functioned poorly. The situation on the fixed-income market is described as similar to the situation prevailing in the autumn. However, certain submarkets are considered to function better than others. Despite this, the functioning

38 The survey is a follow-up of previous risk surveys. The Riksbank's risk survey has been sent out on two 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 current events and developments that are of interest. The Riksbank commissioned survey company Markör to send out the survey on its behalf.

39 A compilation of the responses to all questions can be found at the Riksbank's website, www.riksbank.com.

of most submarkets has significantly deteriorated as compared with the situation before the financial crisis and compared with the situation described in the responses to the risk survey carried out one year ago.

Liquidity is reported to have declined slightly on the repo market. As in the previous survey, a majority of participants still consider that liquidity on the market for government bonds has been satisfactory. A certain improvement, compared with last autumn, seems to have taken place on the Swedish market for mortgage bonds. Although liquidity in mortgage certificates and mortgage bonds has been described as insufficient over the last six months, the responses to the survey are, nevertheless, slightly less negative than they were in the autumn. In particular, liquidity on the market for mortgage bonds is described as having improved during the period. In the spring's survey, 20 per cent and 37 per cent of participants, respectively, stated that they considered liquidity in mortgage certificates and mortgage bonds to have been satisfactory over the last six months. In the autumn, the equivalent proportions were 14 and 16 per cent, respectively.

Even though liquidity, on the whole, is considered to have been poor in the Swedish fixed-income market, many participants state in their comments to the questions that the Swedish market has functioned well, compared with markets in other parts of the world, to the extent that in Sweden it has always been possible to obtain a price.

As regards the foreign exchange market, the survey indicates that the functioning is considered to have deteriorated during the last six months, in comparison with the situation when the two previous surveys were carried out. Only 48 per cent of the respondents in the spring's survey described the functioning of the SEK market as 'satisfactory' or better, which can be compared with a figure of 79 per cent last autumn and 92 per cent for the

previous spring. In an international comparison, the market for SEK is not perceived to have functioned as poorly, but these responses were still more negative than those in earlier surveys. However, the comments to the questions in the survey indicate that outcome was, to a large degree, affected by the situation prevailing in the Swedish foreign exchange market during the late autumn and at the end of last year, which was also discussed in the previous Financial Stability Report (FSR 2008:2). Several respondents stated that liquidity in the Swedish spot and futures markets has improved since the start of the year. The liquidity in the Swedish foreign exchange market during the period is described as irregular, as liquidity holes have arisen when liquidity has first disappeared entirely and then returned.

With regard to the Riksbank's actions to support the markets, participants give both positive and negative assessments. In general, the Riksbank is said to have acted in a satisfactory manner. However, one recurring view among the respondents is that the Riksbank acted late and that communication was insufficiently clear.

The participants' views of the financial crisis and future developments

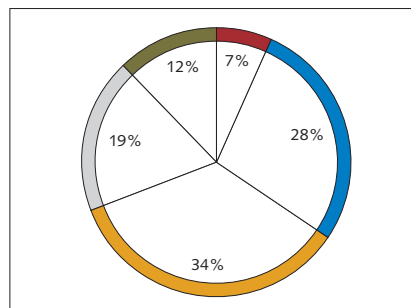
Almost half of the participants believe that the financial crisis has now peaked (see Chart B8). This is an increase compared with the previous survey, when around one third of the respondents believed the crisis had peaked. However, there is still great disunity among the participants regarding this issue. This is illustrated, not least, by the fact that 35 per cent of the respondents believe that things will get worse before they get better and that 19 per cent state that they have do not know. The development of economic activity is named as one of the most frequently recurring risks for the long-term development of the Swedish financial markets. In addition, most participants state

that continued high risk aversion constitutes a long-term risk for the Swedish financial markets. This also applies to the risk that liquidity on the market will continue to be poor.

Regarding the issue of what will be most in focus in the Swedish financial market in the near future, a majority of participants respond that it will be the developments in the Baltic states. The participants also believe that there will be some focus on if and how central banks' will apply a zero interest rate policy and quantitative easing, and whether the Riksbank will take such measures.

A widespread opinion among the participants is that the view of risk has changed permanently as a consequence of the financial crisis. Several participants believe that the increased risk awareness among both companies and investors will remain, which is expected to lead to more focus on risk-weighted assets, greater capital and liquidity reserves and an increased use of centrally-cleared products. In addition, many also believe that the risk premium, that is to say the price of risk, will henceforth be higher than has been the case historically. Furthermore, many of the respondents state that the financial crisis will entail an increase in the regulation of the financial markets.

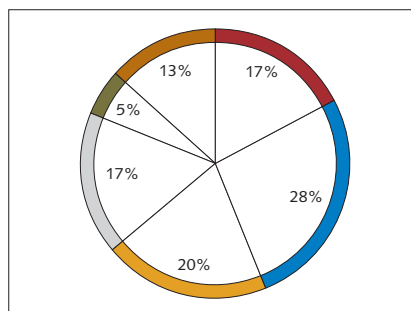
Chart B6. How has your propensity to take risk changed compared to six months ago?
Per cent



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

Source: The Riksbank

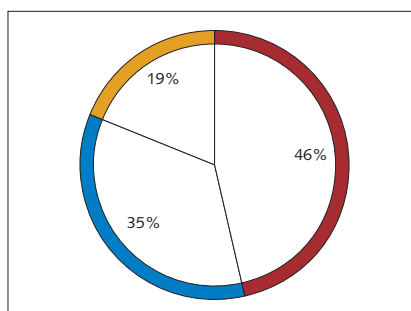
Chart B7. How has your institution's buffer of liquid assets changed compared to six months ago?
Per cent



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

Source: The Riksbank

Chart B8. Do you consider that the financial crisis has peaked?
Per cent



- Yes
- No
- Don't know

Source: The Riksbank

The Swedish banks' borrowers – in brief

Since the end of 2008 the debt servicing ability among the Swedish banks' borrowers has deteriorated substantially. Given the gloomy economic situation, it is probable that the debt servicing ability will deteriorate further for some time to come. However, the effects of the economic crisis vary between the different categories of borrower and between countries.

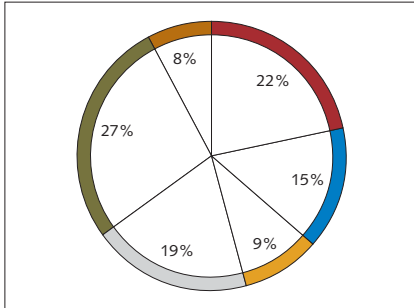
Even if households are very much affected by the recession, the household sector's debt servicing ability is still good and is expected to remain so. This applies to Sweden as well as to the remainder of the Nordic countries and Germany. Stress tests carried out for Swedish households show that they have the capacity to manage both weaker economic activity and higher interest rates.

Bankruptcies have begun to increase in the Swedish corporate sector. As the recession continues, the debt servicing ability is expected to deteriorate further for companies in Sweden and in other countries where Swedish banks are active. However, different sectors will be affected to different extents. The construction and transport sectors are industries where the debt servicing ability has historically declined substantially during recessions and this recession is unlikely to be an exception. The historically low interest rates mean, however, that companies have a better initial position in general now, particularly the property companies, than in the crisis at the beginning of the 1990s. But at the same time, the international outlook is much gloomier than during the crisis in the 1990s. Moreover, companies have found it more difficult to obtain funding in the certificate and bond markets during the financial crisis and bank funding through earlier agreed credit lines has become more common. One consequence of this may be that new customers experience difficulty in obtaining funding.

The effects of the recession are expected to be most severe for borrowers in the Baltic countries and the Ukraine, which have already been hard hit. In the Baltic countries the earlier fears of a recession have been realised and GDP is expected to fall to the same extent as in previous crises in Latin America and Asia. The percentage of Baltic households and companies that have either cancelled or are in arrears with payments on their loans is now increasing rapidly and is expected to continue rising during 2009.

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 debt is one of the largest

Chart 2:1. The banks' lending broken down into Swedish and foreign households and companies, March 2009
Per cent

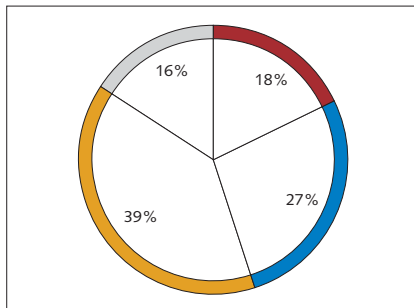


- Swedish households
- Swedish companies, excluding property companies
- Swedish property companies
- Foreign households
- Foreign companies, excluding property companies
- Foreign property companies

Note. Lending to the general public including off-balance sheet credit exposure.

Source: The Riksbank

Chart 2:2 Banks' loan losses, allocated by geographical location, Q4 2008 and Q1 2009
Per cent of total loan losses



- Sweden
- Other Nordic countries
- Baltic countries
- Other countries

Source: The Riksbank

risks faced by the banks. In addition, the banks' results are directly affected by loan volumes, through their effects on interest income.

Of the banks' total lending, which amounted to SEK 7,118 billion in March 2009, around 20 per cent concerns loans to Swedish households (see Chart 2:1). Almost one quarter of the lending entails loans to Swedish companies, of which more than one third is to property companies. Slightly more than half of the banks' total lending is to foreign borrowers, which have become increasingly important to the Swedish banks. In five years the percentage of lending abroad has increased by just over five percentage points. This has partly been due to a pent-up borrowing requirement among borrowers in eastern European countries and to the banks having acquired foreign operations.

A good six per cent of the total lending is to the Baltic countries, just over half of which is to the corporate sector. Swedbank has the largest lending to households, while SEB has primarily focussed on companies. Swedbank and SEB are also represented in the Ukraine. However, their lending in this country of almost SEK 17 billion and SEK 3 billion respectively represents only a small part of the banking groups' total lending.

During the crisis in the 1990s the four major banks' total loan losses amounted at their highest to eight per cent of the banks' total lending. The corporate sector⁴⁰ accounted for 90 per cent of the banks' total loan losses, and the Swedish household sector accounted for the remaining 10 per cent. 65 per cent of the loan losses could be attributed to some form of property exposure.⁴¹

During the fourth quarter of 2008 and the first quarter of 2009, loan losses for the major banks amounted to just over SEK 20 billion, which can be compared with just under SEK two billion for the same period one year earlier. Almost 20 per cent of the loan losses in the past two quarters came from Swedish borrowers (see Chart 2:2), with the largest share concerning loans to Swedish companies. Around 40 per cent of the loan losses arose from activities in the Baltic countries and just under 30 per cent came from other Nordic countries.

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 Swedish banks are active.

⁴⁰ The corporate sector refers in this section to both financial and non-financial companies.

⁴¹ The data refer to loans to households, property companies and construction companies.

The Swedish household sector

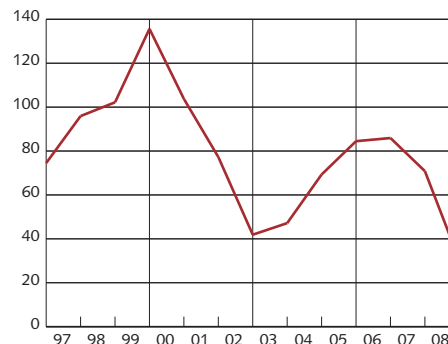
This section describes the financial position of Swedish households, and how household borrowing from credit institutions and their debt servicing ability are expected to develop. As property is often used as collateral for household loans, there is also an analysis of developments in house prices.

The value of households' net wealth in relation to their disposable income has fallen substantially (see Chart 2:3).⁴² This is because households' financial assets were very negatively affected by last year's fall in the stock market. Households' wealth in shares and equity funds fell by almost SEK 380 billion in 2008, while other assets also declined in value. In the wake of the volatile financial markets households have begun to invest a larger share of their financial assets in ordinary bank accounts, in fixed-income funds and with the Swedish National Debt Office. At the same time, households' debt continued to rise. Households' loans with credit institutions increased by just over SEK 175 billion. All in all, this means that the financial net wealth declined by almost SEK 570 billion in 2008, which corresponds to a fall from 70 to 30 per cent of disposable income.

Households' financial situation is expected to be sound. This is explained by the fact that disposable income is expected to continue to increase in the future (see Chart 2:4), albeit at a lower rate than before.⁴³ This is mainly due to tax cuts for those who work and to an increase in public sector transfers, which compensates the negative effect of increased unemployment. At the same time, however, the future looks increasingly uncertain with an increasing number of redundancy notices and lay-offs. Households' saving ratio is therefore expected to remain high in the future (see Chart 2:4).

In March households' total borrowing from credit institutions increased by 8.2 per cent, the lowest increase since 2002. The rate of increase has slowed down, particularly in recent months (see Chart 2:5). Both mortgages and consumer credits are increasing at a lower rate, and these loan types account for 80 per cent and 8 per cent of household borrowing respectively. This is despite the fact that mortgage rates have fallen compared to the high levels prevailing last autumn. After the most recent repo rate cut the mortgage rates have also fallen slightly more than the interbank rate (see Chart 2:6). The lower rate of increase in household borrowing shows that borrowers have become more risk averse in connection with the financial crisis and the economic downturn, and thereby have reduced their demand for loans.

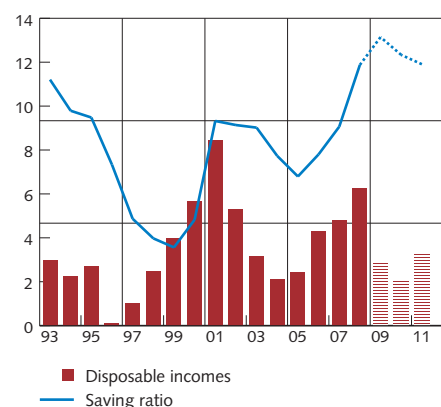
Chart 2:3. Households' financial net wealth in relation to disposable incomes.
Per cent



Note. 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.

Source: Statistics Sweden

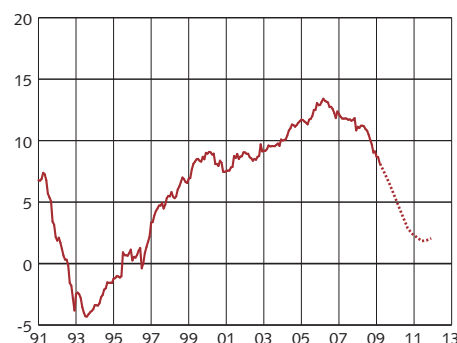
Chart 2:4. Households' nominal disposable income and saving ratio
Annual percentage change and per cent



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 Update, April 2009.

Sources: Statistics Sweden and the Riksbank

Chart 2:5. Households' total borrowing from credit institutions
Annual percentage change

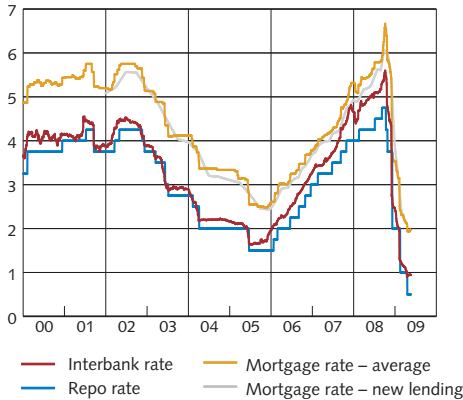


Source: The Riksbank

⁴² Financial net wealth corresponds to households' financial assets minus their financial liabilities. Households' collective insurance saving (including Premium Pensions) and tenant-ownership rights are also deducted from financial assets.

⁴³ See Sveriges Riksbank (2009), "Monetary Policy Update," April.

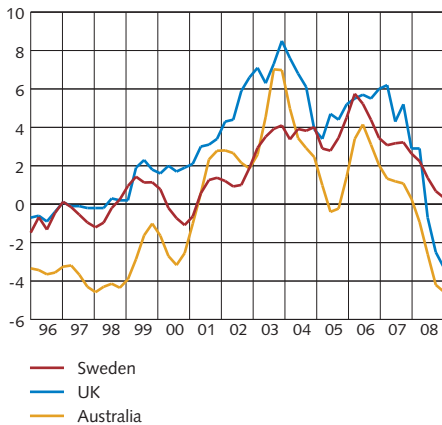
Chart 2:6. Mortgage rate, interbank rate and repo rate
Per cent



Note. The data refer to the average of the three-month mortgage rates from Handelsbanken, Nordea, SBAB and SEB, the three-month interbank rate and the monthly average of the three-month mortgage rate for new lending by the mortgage institutions.

Sources: Reuters EcoWin, Statistics Sweden and the Riksbank

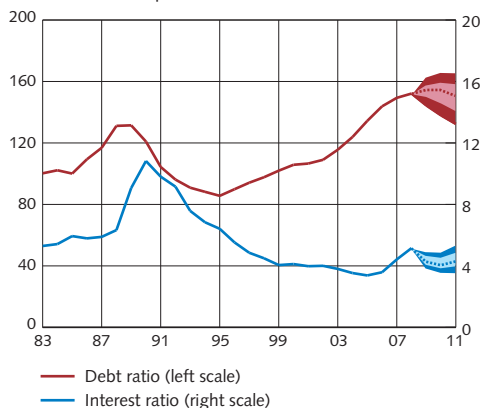
Chart 2:7. Housing equity withdrawal in Sweden, the United Kingdom and Australia
Per cent of disposable income



Note. Housing equity withdrawal corresponds to the difference between net borrowing secured in dwellings and housing investment.

Sources: Reserve Bank of Australia, Reuters EcoWin, Statistics Sweden and the Riksbank

Chart 2:8. Households' debt and post tax interest expenditure
Per cent of disposable income



Sources: Statistics Sweden and the Riksbank

The decline in the rate of borrowing is also explained by the banks having tightened their credit conditions and become more thorough when granting credit. This is normal in an economic downturn when there is great uncertainty. For example, the banks are now demanding a higher down payment for house purchases than they required a year or so ago. They require that households amortise the part of the loan referred to as the second mortgage loan, which was not previously necessary. Just one year ago the demand for a down payment varied more along with the household's income and other assets, while there are now fewer slippages from the banks' lending standards. According to ALMI's bank lending indicator, two out of ten bank managers state that the credit conditions for households have been further tightened during the first quarter of this year compared to the fourth quarter of last year. In addition, the bank managers state that it is more difficult for new private customers to obtain loans than for existing customers.

Household borrowing is expected to continue to increase at a lower rate in the future (see Chart 2:5). Although economic prospects⁴⁴

indicate a continued low interest rate over the coming years, households are expected to be more risk averse in the future. At the same time, house prices are expected to fall. This indicates that households' credit demand will be lower in the future. Moreover, households have in recent years borrowed less and less in relation to their disposable income for other purposes than to improve their property, what is known as housing equity withdrawal (see Chart 2:7).⁴⁵ In the present situation it appears reasonable to assume that this development will continue, which also indicates that the rate of borrowing will be lower in the future. As the situation in the labour market deteriorates, the banks are expected to become even more restrictive in their lending, which is actually common in recessions. But, according to ALMI's bank lending indicator, almost half of the bank managers asked nevertheless expect household borrowing to continue to increase. It is moreover possible that the rate of borrowing will be held up somewhat by the low mortgage rates in the coming months. The low interest rates can also lead to individual households borrowing too much in relation to their incomes and that they may experience problems when interest rates rise again.

A falling interest ratio indicates that the debt servicing ability in the household sector will remain good in the coming period (see Chart 2:8). Household indebtedness amounted to 152.1 per cent of disposable income at the end of 2008. At the same time, households' post-tax interest expenditure increased to 5.2 per cent of disposable

⁴⁴ See Sveriges Riksbank (2009), "Monetary Policy Update," April.

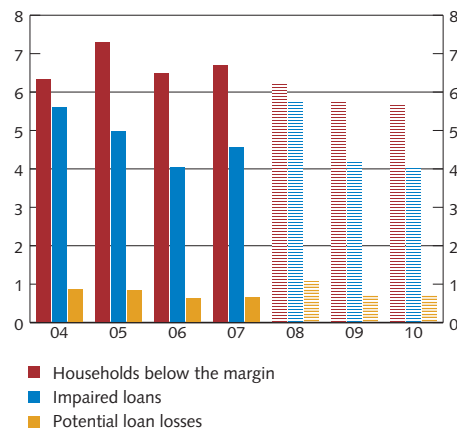
⁴⁵ Housing equity withdrawal is the difference between net borrowing secured on dwellings and households' gross investment in housing. For example, it arises when a home-owner increases the mortgage on an existing property, but uses the funds for something other than to improve the home or buy another property, such as consumption. It may also arise when a household moves to a cheaper home, but reduces the loan on the home by a smaller amount.

income. Several factors will affect the debt ratio in the future. On the one hand, house prices are falling at the same time as households have become more risk averse, which indicates that households will reduce their debt burdens. On the other hand, 60 per cent of the loan stock consists of loans at fixed interest rates, which run for several years, and those with interest-only loans will probably not need to begin amortise until the loan is to be renegotiated when the period for which the interest rate is fixed comes to an end. Nor is it probable that those with debt who may become unemployed during this recession will be able to pay off more of their loans. In addition, interest rates are unusually low. All of this indicates that household debt will increase slightly more in 2009 than the disposable income and then, when the interest rate effect wanes, will increase slightly less (see Chart 2:8). The interest ratio is moreover expected to fall this year and next year. This is explained by mortgage rates being expected to remain low for some time to come, while disposable income continues increasing. This means that interest expenditure as a share of disposable income will decline. All in all, the falling interest ratio means that the debt servicing ability in the household sector is expected to remain good in the future.

The proportion of households which according to calculations are unable to pay their interest expenditure and other running expenses increased in 2007 (see Chart 2:9 and the box Stress test of households' debt servicing ability). It was especially the households with the lowest incomes who experienced a deterioration. These households' income did not increase as much as the income for households with a higher income, while interest expenditure increased for all income groups. However, it is important to mention that households with lower incomes account for only a small share of the household sector's total loan stock (see Chart 2:10). An important change compared to previous years is that the proportion of households unable to cover their running expenses (so called households below the margin) has also increased in the group with high incomes, albeit from very low levels. This could be a source of concern, as these households account for a good 57 per cent of households' total liabilities (see Chart 2:10). However, it should also be added that the value of these households' total assets exceeded the value of their debt, which means that they are not currently considered likely to cause any major loan losses in the banking sector.

Generating of data and stress tests show that households' debt servicing ability is assessed to remain good overall. The proportion of households below the margin will decline in the future, which is mainly due to lower interest expenses and a continued increase in disposable incomes. However, given the current economic situation, it is doubtful whether all income groups will enjoy increased incomes.

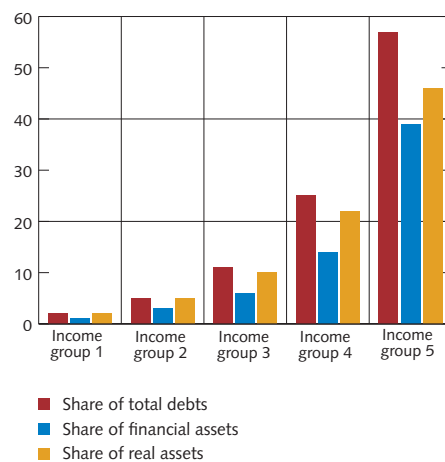
Chart 2:9. Households below the margin, impaired loans and potential loan losses
Per cent



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 show the results from generating of data.

Sources: Statistics Sweden and the Riksbank

Chart 2:10. Percentage debt, financial assets and real 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.

Sources: Statistics Sweden and the Riksbank

However, the negative effects of the economic downturn do not need to be as large since a good 80 per cent of household debt is held by households in the two highest income groups and most of these will manage to pay their loan costs.

According to stress tests, households' debt servicing ability is not particularly affected by increased unemployment.⁴⁶ The proportion of impaired loans will only increase from 4.6 per cent to 6.0 per cent of households' total debt when unemployment increases by six percentage points. A household with two incomes, one labour income and one as unemployment benefit, will usually still be able to service its debt at the same time as managing to pay its other running expenses. One can therefore draw the conclusion that increased unemployment will probably not lead to the household sector causing any major loan losses in the banking sector. However, the possibility that the debt servicing ability for individual households could deteriorate cannot be ruled out. This may refer to households where the unemployed person does not receive unemployment benefit. It also applies 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 unemployment will be high and many households could therefore experience payment problems, which could lead to the situation for the banks there deteriorating. If unemployment rises substantially within a particular region, this will also have consequences for the real economy.

The stress tests show that households are primarily affected by higher mortgage rates. If households' interest expenditure increases by six percentage points⁴⁷ then the proportion of impaired loans will increase fairly sharply. 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. In addition, the largest share of the impaired loans is covered by wealth, which means that if the worst were to happen, the banks would regain a large part of the loans. 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 running expenses increases when higher mortgage rates coincide with increased unemployment, but this is primarily due to the higher mortgage rates. At present, however, the assessment is that there is a greater risk that unemployment will rise more than expected than that mortgage rates will be as high as last autumn. Nevertheless, as economic activity recovers, it is reasonable to expect higher interest rates for households.

46 For information on stress tests, see the box "Stress test of households' debt servicing ability". See also the article in Sveriges Riksbank Economic Review 2006:3 for a description of the methods used.

47 This would mean that the interest ratio amounts to just over 12 per cent, however it has not been this high since September 1990, when it was 11.4 per cent, but on the basis of the most recent monetary policy assessment this cannot be regarded as a probable scenario.

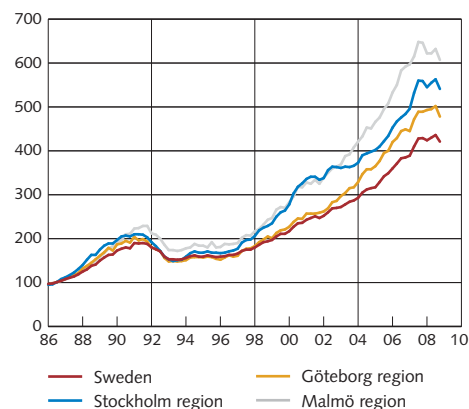
House prices in Sweden fell by almost two per cent in 2008, particularly during the last quarter (see Chart 2:11). At the same time prices of tenant-owned apartments fell by nine per cent (see Chart 2:12). The price fall can be explained by relatively large supply of housing, at the same time as mortgage rates were high last autumn. In addition, prospective buyers were very cautious, which is reflected in the fact that sales fell substantially last year. The statistics show that the time to sell single-family dwellings trebled and the time to sell tenant-owned apartments doubled (see Chart 2:13). According to Statistics Sweden, the number of transactions in the housing market was twelve per cent lower in 2008 than in 2007, although 2007 was a record year.

Since the beginning of the year, however, the housing market situation has stabilised somewhat. The large interest rate cuts made by the Riksbank since December 2008 have led to mortgage rates falling substantially, at the same time as there appears to have been a pent-up demand for housing. Although the supply is currently relatively large, the prospective buyers have once again become more active and the time to sale declined substantially in February and March (see Chart 2:13). According to data from real estate agents, the prices of tenant-owned apartments in Sweden have increased by eight per cent over the past three months, that is, during February-April, compared to the previous three months November-January. This optimism is confirmed by SBAB's (Swedish Housing Finance Corporation) survey of estate agents, which predicts a slight increase in prices, shorter time to sale and increased demand. SEB's housing price survey also indicates a larger number of households believing that house prices will rise than that they will fall.

Despite the budding optimism, the Riksbank's assessment is that house prices will fall in the long term. This is because the strongly negative trend in the labour market will in the long term outweigh the current optimism in the wake of low interest rates. As the number of redundancy notices and lay-offs increases, households' demand for housing will decline, which will in turn lead to that house prices probably begin to fall again. In addition, house prices are expected to continue to fall in many other countries, for instance, Denmark, Norway and the UK, which also indicates that Swedish house prices will fall.

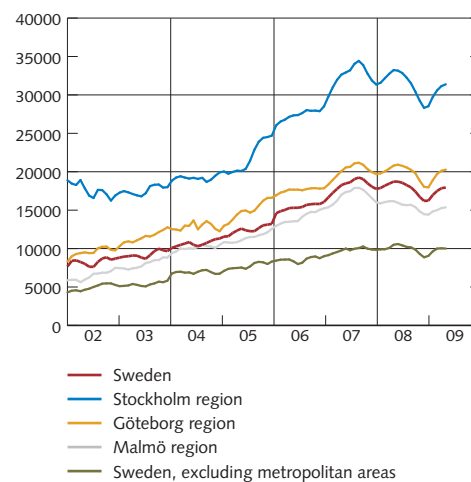
Experiences show that house prices often covary between countries. As houses are not goods traded across national borders, it is not clear how price changes in the housing market in one country can spread to another. However, there are other channels that may explain why developments in house prices track one another internationally. For instance, this can reflect changes in the international business cycle. Another explanation is that the increased global financial integration has meant that households' net financial wealth, and thereby their

Chart 2:11. House prices in Sweden, Stockholm, Göteborg and Malmö regions
Index: 1986=100



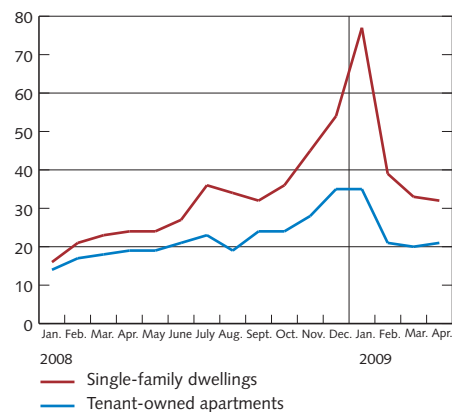
Source: Statistics Sweden

Chart 2:12. Tenant-owned apartment prices, three-month moving average
SEK per square metre



Source: www.maklarstatistik.se

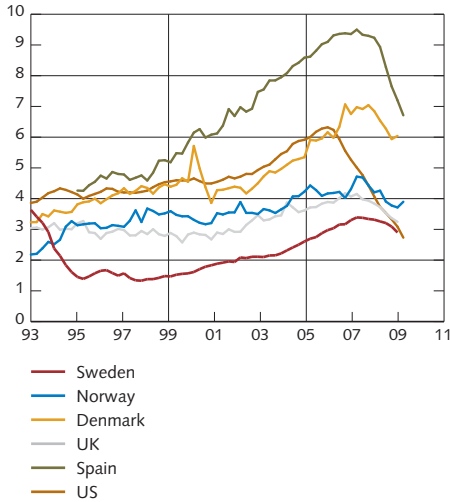
Chart 2:13. Time to sale, sell houses and tenant-owned apartments in Sweden
Number of days, median



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.

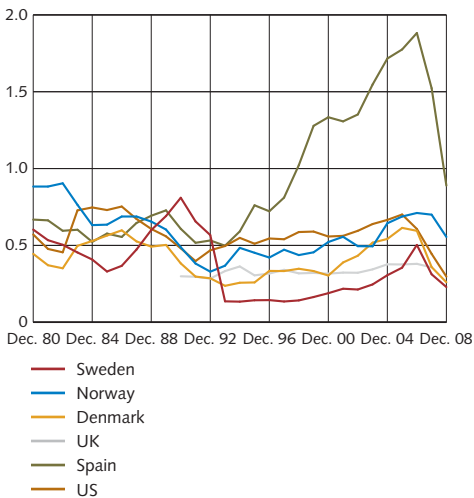
Sources: Hemnet and www.maklarstatistik.se

Chart 2:14. Housing investment in relation to GDP, seasonally-adjusted data
Per cent



Sources: Statistics Sweden, Reuters EcoWin and the Riksbank

Chart 2:15. Number of housing starts in relation to population
Per cent



Dec. 80 Dec. 84 Dec. 88 Dec. 92 Dec. 96 Dec. 00 Dec. 04 Dec. 08

Note. The number of housing starts in Sweden during 2006 and 2007 is overestimated, as a result of the "Odell foundation slabs" (Odellplattorna); the actual number of housing starts was much lower, according to the National Board of Housing, Building and Planning. The Odell slabs (named after a government minister) arose due to companies bringing forward the construction start for 8,000 homes before the end of 2006, as the government decided to abolish the government interest subsidy and investment grant with effect from 1 January 2007.

Source: Reuters EcoWin

ability to pay when buying a house, has become more dependent on developments in other countries.

However, it is likely that house prices will fall slightly less in Sweden than in some other countries. Several factors suggest that this is the case. Firstly, new construction since the early 1990s has been at a much lower level in Sweden than in other countries (see Charts 2:14 and 2:15). Secondly, there is a shortage of housing in approximately half of the country's municipalities.⁴⁸ According to the construction companies' forecasts, the housing shortage will remain over the coming years, as new construction of apartments and single-family dwellings will decline substantially this year and is expected to remain largely unchanged next year.⁴⁹ Thirdly, Swedish households buy their homes to live in, not to rent them. In the United Kingdom and in Ireland, where house prices are now falling sharply, there has been a large market for buy-to-let. This means that a house or an apartment purchased to be rented out on commercial basis, which has introduced a speculative element to the housing market that largely does not exist in Sweden.

To summarise, households' debt servicing ability is expected to remain relatively sound. The Riksbank assesses that the household sector as a whole is not expected to cause any major loan losses in the banking sector. Stress tests show that households in general have the capacity to manage an economic downturn, with rising unemployment and higher interest rates. A fall in house prices does not automatically mean that the household sector constitutes a threat to financial stability, as households can still pay off their loans. However, this does not exclude the possibility of individual households suffering payment difficulties. So far, some municipalities are particularly hard hit by a large number of redundancies and here households' debt servicing ability may be much worse than the country as a whole, which puts the banks in these municipalities in a more difficult situation. However, household borrowing is expected to continue to increase in the future, although the rate of increase is expected to be lower than in recent years, as the uncertainty over economic outlook means that households will be more risk averse.

⁴⁸ The National Board of Housing, Building and Planning's housing market survey for 2008-2009.

⁴⁹ See the Swedish Construction Federation (2009), "Byggekongjunkturen" no. 2, May (survey of economic activity in the construction industry) and the National Board of Housing, Building and Planning (2009), "Boverkets indikatorer" March.

Stress test of households' debt servicing ability

When analysing the household sector we use both macro data in the form of aggregate data from the National Accounts and the Financial Accounts, and micro data on households' finances, which are compiled into Statistics Sweden's annual cross-section survey, HEK. Below follows a description of how micro data can be used in stress tests of households' debt servicing ability.

Aggregate macro data hides vulnerabilities in the household sector

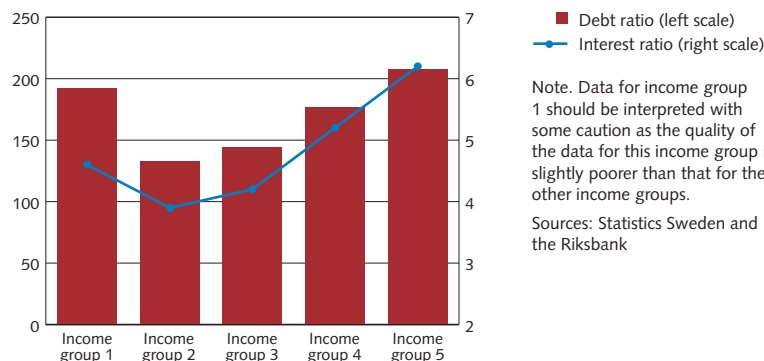
Aggregate macro data does not distinguish between indebted and non-indebted households. For example, the debt ratio is households' total debt in relation to households' disposable income for all households, thus including those who do not have any debt (compare Charts 2:8 and B9). Nor does aggregate data take into account the allocation of debt, interest expenditure and income. This makes it difficult to use macro data to detect vulnerabilities in the household sector, as there could be areas of the household sector that are vulnerable and could cause loan losses in the banking sector, but these households are hidden at an aggregate level by those who are financially sound.

Given this, the Riksbank also uses micro data on households' finances, the HEK survey, to analyse the household sector. The HEK survey contains information on individuals' labour income, capital income, public sector transfers, taxes, interest expenditure, assets and liabilities and demographic variables such as gender, age and place of residence, which makes it possible to study the financial situation of different income groups.

Analysis of the HEK survey

Before the data on households' finances is analysed, it is divided into five income groups, with the same number of households in each

Chart B9. Indebted households' interest ratio and debt ratio broken down into different income groups
Per cent



Note. Data for income group 1 should be interpreted with some caution as the quality of the data for this income group is slightly poorer than that for the other income groups.

Sources: Statistics Sweden and the Riksbank

group. Then households without debt and households with negative income are removed from the data set. Hence it is only data regarding indebted households that are used in the analysis, as they are the only households that can cause loan losses for the banks. Chart 2:10 shows the distribution of debt and financial and real assets held by different income groups. It can be seen clearly that high incomes, high indebtedness and large assets go hand in hand. A comparison of earlier outcomes also shows that the distribution of assets and liabilities across income groups remains stable over time.

To be able to make an assessment of the household sector's debt servicing ability, it is assumed that households under normal circumstances service debts from disposable income and after this the following variables are calculated.

Households' margins show how much of its disposable income a household has left after it has serviced its debt, paid other housing costs and other non-housing related costs⁵⁰. If the margin is negative, the household is designated as vulnerable and it is assumed that the probability that the household may default on its debt is equal to one.

The proportion of vulnerable households⁵¹ is calculated by dividing the number of households with a negative margin by the total number of households in the population. This variable

50 Households' non-housing related costs are calculated with the aid of the National Board of Health and Welfare's norms for necessary expenditure over and above housing costs.

51 Vulnerable households are also termed "households below the margin".

shows how large a share of total households that has margins below zero.

Exposure at default measures the proportion of impaired loans, that is, the share of total household debt held by vulnerable households.

The proportion of potential loan losses corresponds to the debt held by vulnerable households that is not covered by the households' financial or real assets. For example, if a household defaults on its debt and has assets and liabilities corresponding to SEK 8,000 and SEK 10,000 respectively, the exposure at default equals SEK 2,000. But if households' net wealth is greater than or equal to zero, the default will not cause any loan loss to the creditors as the debt is covered by the assets.

Stress tests of households' debt servicing ability

If households' debt servicing ability deteriorates, as a result of, for instance, higher interest rates or higher unemployment the banks' credit risk will increase. The debt servicing ability is therefore tested by raising interest expenditure by up to six percentage points and raising unemployment by up to six percentage points. Another scenario tested is how the debt servicing ability is affected by lower asset prices.

How the proportion of vulnerable households changes, after a deterioration of their financial situation indicates how sensitive they are. The fraction of the households' total debt held by vulnerable households can thus be regarded as a measure of the increased credit risk in lending. Potential loan losses are in their turn a measure of how severe the loan losses become if the vulnerable households indeed default on their debt.

To test households' debt servicing ability in a high interest rate scenario, we first calculate households' implied interest rate level, that is, their interest expenditure in relation to their debts. Then a higher interest rate is multiplied by the debt and then the above variables are calculated once again. Higher interest rates lead

to an increased proportion of impaired loans, but the percentage of potential loan losses only increases slightly.

To raise the level of unemployment in the stress test, individuals assumed to become unemployed are randomly selected. Their income is then replaced with unemployment benefits. This procedure is repeated until the assumed unemployment level is achieved in the population. The next step is to recalculate the specified variables. It is apparent that increased unemployment leads to the percentage of vulnerable households only increasing slightly, as does the proportion of impaired loans, and the estimated potential loan losses increases marginally.

The most important conclusion from the Riksbank's stress tests is that households' debt servicing ability is affected less by increased unemployment than by increased interest expenditure. One explanation for this is that it is the households with the highest incomes that account for the largest share of the household sector's debt (see Chart 2:10). These households usually consist of two working adults; they thus have two incomes. Even if one of them becomes unemployed, the other's earnings together with unemployment benefit are expected to suffice to cover the living costs and interest payments.

If a household defaults on its payments, the creditor will usually regain a large percentage of the debt nonetheless. This is explained by the fact that the largest share of households' debt has some form of property as collateral. This means that the bank will nevertheless regain more or less the entire amount of the debt by realising the collateral, given that the value of the property has not fallen. As households' debt servicing ability is affected more by increased interest expenditure than increased unemployment, we also test how the potential loan losses are affected by an interest rate increase at the same time as asset prices fall. Nor in this case will loan losses increase to such an extent that the household sector would constitute a threat to financial stability.

The Swedish corporate sector

This section analyses corporate sector borrowing from the credit institutions and companies' debt servicing ability. The analysis is focussed on a few central financial ratios and on an assessment of companies' demand for credit and of credit quality during the period 2009–2011.⁵²

Companies' financial positions have continued to deteriorate. This is shown by an analysis of a few central financial ratios. Companies' current ratios have gradually weakened, which means that companies have diminishing liquid assets to use for their short-term payment obligations (see Chart 2:16). At the same time, companies' liabilities in relation to their total assets have increased rapidly in 2007 and 2008 after having fallen for several years (see Chart 2:17). Moreover, companies' profitability has declined substantially in a very short time (see Chart 2:18). This is because companies' profits have become lower as a result of the rapid downturn in the economy. The impaired profitability and the higher debt/equity ratio have implied that the interest coverage ratio has become lower, despite the fact that interest rates for new loans have fallen substantially (see Charts 2:19 and 2:20). This means that companies have less capacity to cover their interest costs.

Chart 2:16. 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

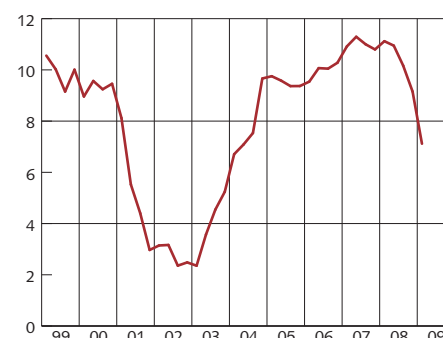
Chart 2:17. Debt/equity ratio in Swedish listed companies
Ratio



Note. The debt/equity ratio is defined as debts in relation to booked equity capital.

Sources: Bloomberg and the Riksbank

Chart 2:18. Profitability in Swedish listed companies
Per cent

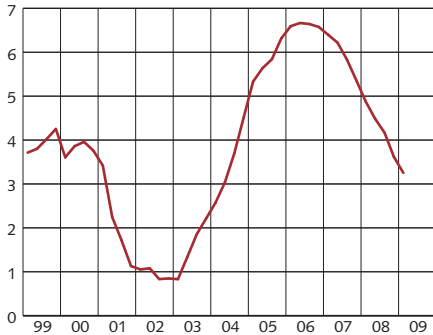


Note. Profitability is defined as the operating surplus in relation to the total assets.

Sources: Bloomberg and the Riksbank

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

Chart 2:19. 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.

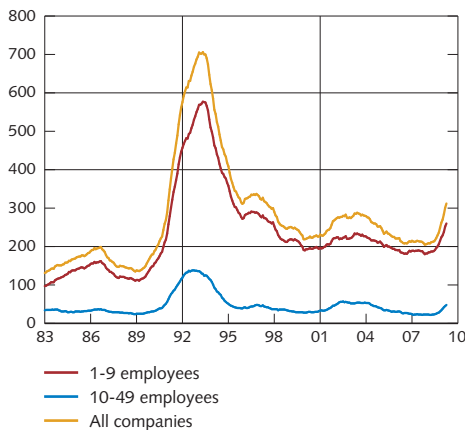
Sources: Bloomberg and the Riksbank

Chart 2:20. Lending rates on new loans signed by non-financial companies
Per cent



Sources: Reuters EcoWin and the Riksbank

Chart 2:21. The number of company bankruptcies broken down by company size
Twelve-month moving average



Sources: Statistics Sweden and the Riksbank

The number of bankruptcies has begun to increase as a result of companies poorer financial position (see Chart 2:21). It is above all bankruptcies among the smaller companies that have increased, which is normal at the beginning of a recession. The number of bankruptcies is increasing in all regions and industries, but it is the private services sector, wholesale and retail trade and the transport and construction sectors that are contributing the most to the upturn.

The increase in the number of bankruptcies is as large as it was during the crisis at the beginning of the 1990s (see Chart 2:22). This can be seen from the bankruptcy index used to compare the current crisis with the IT crisis at the beginning of the 2000s and the crisis at the beginning of the 1990s. This development may be problematic if it continues, as the number of bankruptcies increased substantially during the crisis at the beginning of the 1990s, and led to large loan losses for the Swedish banks. Unlike the crisis at the beginning of the 1990s, which was concentrated to Sweden, the current financial crisis is a global one, and has in a short time intensified the global economic downturn. The Swedish economy has also been hit hard over a short period of time, which is clear from the increase in bankruptcies. One factor that is decisive for the way that bankruptcies will develop in the future is how quickly the world economy, and thereby also the Swedish economy, can recover from the economic crisis.

Despite the poorer financial position, companies have continued to increase their borrowing from credit institutions (see Chart 2:23).⁵³ Historically, corporate borrowing has had some correlation to developments in real fixed capital investment. This indicates that in the past companies have borrowed to fund their investment. Since the financial crises began in summer 2007, however the pattern has changed. The rate of increase in fixed gross investment has slowed down considerably, despite the fact that companies' borrowing has continued to increase strongly. One important factor that may have contributed to this is that companies' opportunities to fund their activities in the securities and equity markets have deteriorated since 2008 (see the box The effects of the financial crisis on companies' funding possibilities). Companies are therefore to an increasing extent forced to fund their activities by bank loans.

As investments will grow more slowly and gradually decline, companies' borrowing requirements are expected to decline over the coming year (see Chart 2:23).⁵⁴ However, this is counteracted to some extent by companies having a refunding need, at the same time

⁵³ This data refers to the credit institutions' total lending to companies.

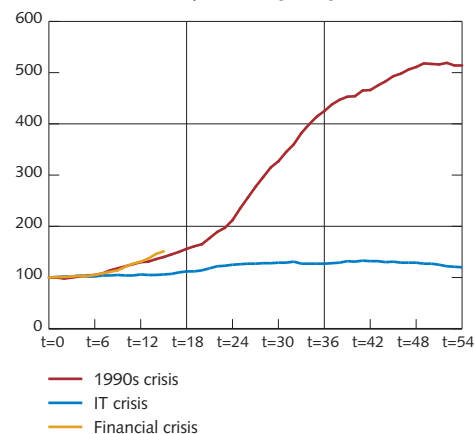
⁵⁴ Even if the banks have replaced the bonds and certificates that have matured, they have been restrictive in their new lending for new investments and to new customers. This is clear from the contacts the Riksbank has had with market participants. See also the Riksbank's survey on "The funding situation according to companies", 9-24 March 2009, ALMI Företagspartners loan indicator April 2009 and the National Institute of Economic Research's economic tendency survey for February.

as they are still experiencing difficulties in funding their operations with bonds and certificates. This means that companies must turn to credit institutions. Companies' refunding needs can be illustrated with the aid of the maturity structure for outstanding bonds and certificates 2009–2011 (see Charts 2:24 and 2:25). This shows that they have a total refunding need in 2009 corresponding to around SEK 160 billion. If one assumes that companies refund SEK 85 billion with loans from the Swedish banks, this means that the banks need to increase their lending by a further five percentage points to enable companies to cover the lack of market funding. At the beginning of 2011 corporate borrowing is expected to pick up again as they increase their investment.

According to the expected default frequency (EDF), the percentage of bankruptcies will continue to increase substantially over the coming year (see Chart 2:26).⁵⁵ Despite the fact that the EDF only measures developments in listed companies, it is proved to be a good indicator of how bankruptcies can develop throughout the corporate sector.⁵⁶ The last time the EDF increased this much was during the IT crisis. But then it took two and a half years before the EDF measure reached the same high level as we have now seen in just one year. The large deterioration in the EDF over the past year indicates that companies' financial situations have deteriorated rapidly.⁵⁷

Companies' credit quality is expected to deteriorate as a result of the more rapid economic downturn (see Chart 2:26).⁵⁸ When demand in the economy declines, companies find it difficult to sell their products, which can lead to payment problems and thereby bankruptcy. As the Swedish economy is now in a recession, this risk is high at present. But interest rates in the economy also have significance for a company's ability to pay its loans, as an interest rate change can quickly have an impact on the company's capital costs. The banks' lending rates for new loans are expected to remain low until the economic prospects improve. This contributes to the companies' interest coverage ratio becoming higher and at the same time to the number of bankruptcies declining. But this is first and foremost a consequence of low interest rates and not of improved earnings by companies. The low interest rates mean that many companies can temporarily manage to cover their interest costs. When the economic prospects improve, the banks are expected to increase their lending

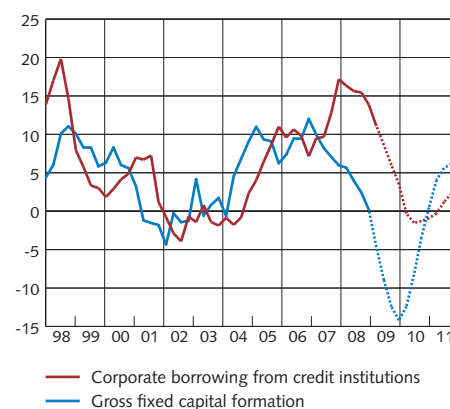
Chart 2:22. Bankruptcies during and after various crises in Sweden
Index, last month prior to beginning of crisis = 100



Note. The bankruptcy index is assumed to be equal to 100 immediately prior to the beginning of a crisis and the number of bankruptcies is expected to be at its lowest level. The early 1990s crisis and the IT crisis started during January 1989 and January 2000, respectively. The number of bankruptcies was at its lowest level in January 2008, just before the financial crisis started to impact the Swedish economy.

Sources: Statistics Sweden and the Riksbank

Chart 2:23. Corporate borrowing from credit institutions and fixed gross investment
Annual percentage change



Note. Broken lines represent the Riksbank's forecasts.

Source: The Riksbank

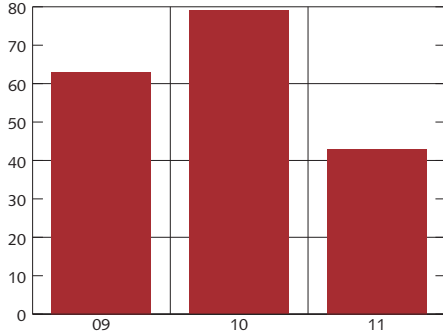
⁵⁵ The EDF can be described as a measure of the company's credit quality and it gives an indication of the probability of a listed company going bankrupt within a year. This is calculated as the likelihood that the market value of the company's assets will be lower than the size of its debts when they fall due for payment. It is Moody's KMV credit rating agency that calculates the EDF.

⁵⁶ Many smaller companies are often sub-contractors to the larger companies and are indirectly dependent on how the situation for these larger companies develops.

⁵⁷ This is particularly apparent for companies with lower credit ratings. In March, the percentage of bankruptcies among companies around the world rated as Ba/BB or lower by Moody's/Standard & Poor's was 5.2 per cent (see Chapter 1 and Chart 1:8).

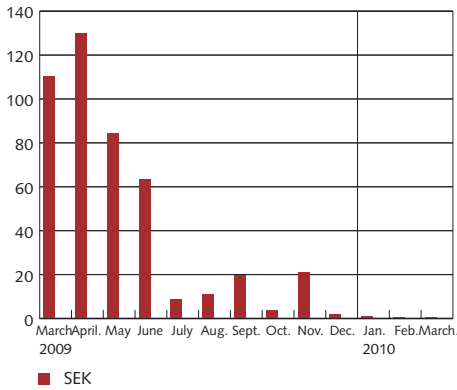
⁵⁸ To estimate how the expected default frequency figure develops over time, the Riksbank has developed a model for making forecasts of future credit quality in the corporate sector. The credit quality is represented by the expected default frequency (EDF) and then related to the macroeconomic developments. The model was presented in Financial Stability Report 2007:1.

Chart 2:24. Maturity structure for outstanding corporate bonds.
SEK billion



Sources: Bloomberg and the Riksbank

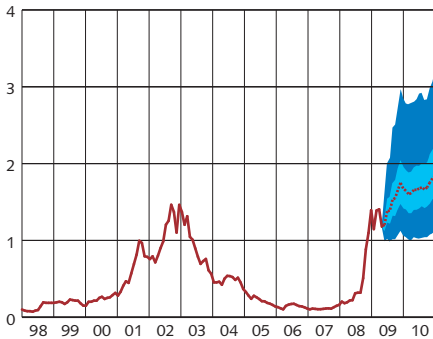
Chart 2:25. Maturity structure for corporate certificates 2009.
SEK billion



Note. These data refer only to corporate certificates issued in Sweden.

Sources: Euroclear Sweden AB and the Riksbank

Chart 2:26. Corporate credit quality measured by expected default frequency (EDF), historical outcomes and forecasts according to the Riksbank's main scenario
Per cent



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

Sources: Moody's KMV Credit Edge and the Riksbank

rates for new loans. This could in turn turn lower companies' interest coverage ratios as the earnings in the companies are not expected to increase to the same extent despite an improved business cycle. This means in turn that the probability that companies will not manage to repay their debts within a certain period increases, which can lead to the number of bankruptcies rising once again. The increase in credit risk that this indicates could lead to larger loan losses for the banks. However, developments in credit quality for the median company in various branches differ substantially. Credit quality for companies in the transport and services sectors is deteriorating more than for other industries. The development of bankruptcies is expected to be relatively high even for companies in the construction and hotel and restaurant industries.

The banks' lending to private equity investment companies also comprises a risk in the future.⁵⁹ Loans to leveraged buyouts involving private equity investment companies have increased substantially in recent years. The Riksbank's examination of the four major banks' reports and interviews with them show that their credits for leveraged buyouts in which private equity companies are involved total over SEK 120 billion. That is about 1.7 per cent of these banks' total stock of loans. The credit quality of the companies that the private equity investment companies have already acquired is expected to deteriorate in the future. These companies have a high debt burden which makes their situation and the situation for the banks that have lent to the private equity investment companies particularly alarming. However, these credits are almost exclusively senior credits which have top priority in the event of bankruptcy. Credits with a lower priority are disposed of immediately in the secondary market, which reduces the risks associated with lending. At the same time it will become increasingly difficult for private equity investment companies to obtain funding for new company acquisitions if the banks choose to reduce their risk-weighted assets.⁶⁰

To summarise, the credit risk in the Swedish corporate sector will increase over the coming three years, while the demand for credit will decline. The reasons for this are the rapid economic downturn and the weak recovery, combined with rising lending rates in the future. The number of bankruptcies has already begun to increase as a consequence of companies' financial positions having deteriorated in a very short time. So far the number of bankruptcies has increased at the same rate as at the beginning of the 1990s crisis. But the starting position of the Swedish economy is much better today, notably because of the low interest rates that help to hold back bankruptcy.

59 See Sveriges Riksbank (2008) "The Swedish Financial Market 2008", page 63 for a closer description of private equity investment companies.

60 See the quarterly survey by the Swedish Private Equity & Venture Capital Association, the Innovationsbron and the Swedish Agency for Regional and Economic Growth on private equity investment companies' activities and funding at an early stage for Q3 2008.

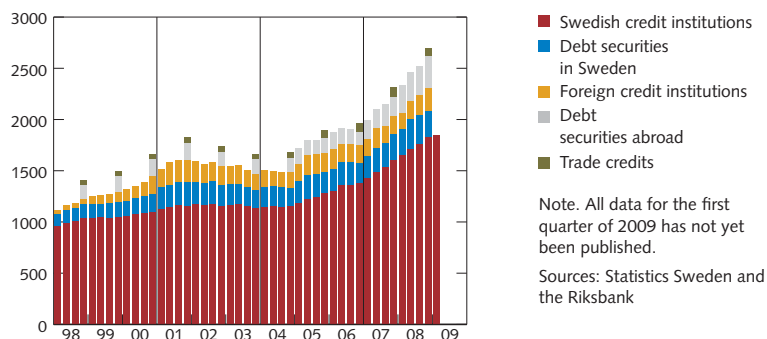
The effects of the financial crisis on companies' funding possibilities

Lending to non-financial companies has increased at a rapid rate since the financial crisis started in summer 2007. This is somewhat surprising given the current economic situation, particularly as companies are painting a picture through various surveys of experiencing difficulties in obtaining funding. This box provides a current status report on companies' funding possibilities and explains why Financial market statistics and surveys provide different pictures of developments.

Statistics and surveys point in different directions

Since summer 2007 corporate borrowing from credit institutions has increased at a high rate (see Chart 2:23). During 2008, however, borrowing began to increase at a slightly lower rate, although it is still high. According to various surveys, companies have stated, quite contrary to the official statistics, that it is difficult to obtain credit. For example, 60 per cent of the bank managers in ALMI's bank lending indicator⁶¹ state that it is more difficult for new than for existing corporate customers to obtain loans compared to one quarter ago. In several other surveys many companies, both large and small, claim that it is more difficult or much more difficult than normal to obtain funding, and it is especially difficult to obtain loans with long maturities. However, the picture is not clear, although the surveys point to the banks having tightened their lending standards for companies in certain industries.⁶² To find explanations for the large increase in borrowing despite the opposing picture given by the surveys, one must first understand the companies' funding structure.

Chart B10. Corporate borrowing from credit institutions and their securities funding in Sweden and abroad
SEK billion



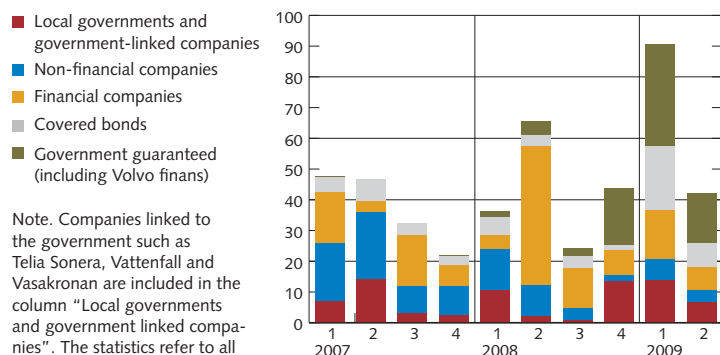
The companies' funding structure

Borrowing from Swedish credit institutions is the most important source of funding for Swedish companies. This is followed by borrowing from foreign credit institutions, which constitute however a much smaller share of the companies' debt (see Chart B10). Another important source of funding is debt securities. This form of funding takes place on the bond market by issuing corporate bonds and in the money market by issuing commercial paper. When a corporate bond matures, a refunding need arises, which the company must cover in one way or another, given that the total funding need remains unchanged.

61 ALMI Företagspartner AB carries out a survey of 150 bank managers every quarter. The most recent survey was published in April 2009.

62 According to the Riksbank's survey "The funding situation according to companies", March 2009, the National Institute of Economic Research's business tendency survey April 2009, and the Swedish Federation of Business Owners survey "Small business in crisis", March 2009.

Chart B11. Total issued in the Swedish corporate bond market broken down by issuer
SEK billion



Note. Companies linked to the government such as Telia Sonera, Vattenfall and Vasakronan are included in the column "Local governments and government linked companies". The statistics refer to all corporate bonds with a maturity of more than 18 months not issued by governments or in the mortgage institutions' benchmark programme. The outcome for Q2 refers to issues up to 22 May 2009.

Sources: Bloomberg and the Riksbank

The companies' funding problems

There are several factors that may have contributed to corporate borrowing continuing to increase at a relatively high rate, despite the fact that surveys show that companies consider it much more difficult to find funding via banks and the market. One explanation for the companies' increased borrowing could be that since 2008 companies have found it more difficult to fund their operations through the securities market and that it has become more expensive to do so (see Chart B11). The companies can then make use of existing credit lines in Swedish and foreign banks, which thus

increases the borrowing from credit institutions. At the same time, the banks must in turn fund the credit lines used by the companies. However, under the prevailing circumstances it is also expensive for the banks to acquire funding, at the same time as the funding opportunities are limited. This could mean that it becomes more difficult for small, higher-risk companies to borrow from the banks. In other words, the large companies' increased borrowing may repress the possibilities for smaller companies to borrow from the banks. This is reflected in both the Swedish Federation of Business Owners survey and in ALMI's bank lending indicator.

A further explanation as to why companies consider it difficult to obtain funding is that the banks are trying to reduce their own funding costs. One means of doing this is to try to retain the credit rating they already have or to try to acquire a better credit rating in the market. They can do this for instance by increasing their capital. However, increasing capital entails costs for the banks, which means it is easier to try to bring down or retain the level of the risk-weighted assets. The banks can achieve this, for example, by cutting down on lending to small companies, whose possibilities to fund themselves by means of bank loans thus deteriorate.

Despite the poorer financial position, companies are continuing to increase their borrowing from credit institutions. This is largely because companies' opportunities to fund their operations in the bonds and securities market have deteriorated. It has at the same time pushed aside the banks' lending for new investment planned by existing and new customers.

The commercial property market and property companies

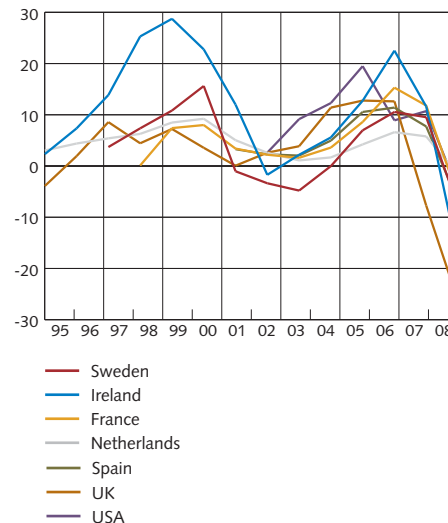
This section describes the financial position of property companies, and how their borrowing and their debt servicing ability is expected to develop in the future. A large share of the banks' lending to property companies is with property as collateral. The value of the property used as collateral and the property companies' earnings and debt servicing ability are determined in the commercial property market. The section therefore begins with a review of developments in this market.

THE COMMERCIAL PROPERTY MARKET

Commercial property prices in Sweden and abroad have continued to fall substantially (see Charts 2:27 and 2:43). However, the price fall has not been as large in Sweden as in, for instance, the United Kingdom and Ireland. On the other hand, prices in Sweden have fallen more than they have in, for instance, France, the Netherlands, Spain and the United States.⁶³ In Sweden commercial property prices fell (that is, offices, retail, industrial premises and residential) by almost eight per cent in 2008, compared with the previous year. This can be compared with a price fall of between just over 17 and 26 per cent in Ireland and the United Kingdom respectively, and of between two and seven per cent in France, the Netherlands, Spain and the United States during the same period. The fact that prices have fallen by different amounts is due to the extent to which the rental market has been able to secure good earnings and thereby counteracted the generally increased yield levels and thereby the price fall. In addition, the variations in price developments depend on how large the previous price increases have been in the respective markets.⁶⁴

The price fall in the different segments of the Swedish commercial property market varies between six and eight per cent. Offices and industrial property represent the segments with the largest

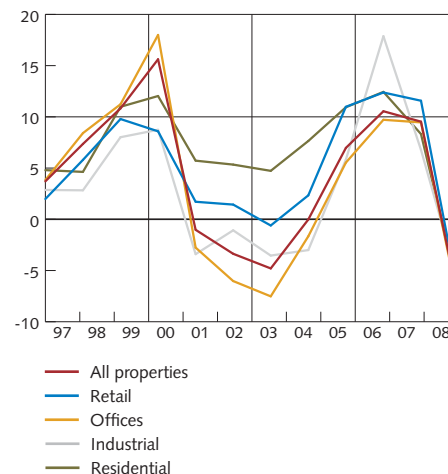
Chart 2:27. Commercial property prices in Sweden and abroad
Annual percentage change



Note. Refers to all commercial property (offices, retail, industrial property, residential and other).

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

Chart 2:28. Commercial property prices in Sweden
Annual percentage change



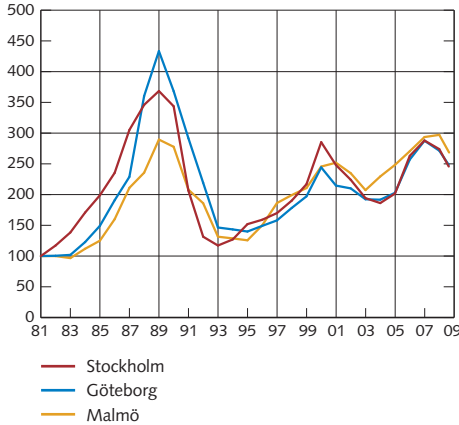
Note. The population of office properties may differ from Newsec's in Chart 2:29. This is because IPD/SFI's office value represents offices in the whole of Sweden based on the values of the 1,276 properties from IPD/SFI's total of 17 members, which accounts for SEK 225 billion of the Swedish property market.

Sources: IPD, Reuters EcoWin and the Riksbank

63 According to the annual French price index the price outcome for all types of property was 6.0 per cent. According to the biannual French price index, however, the annual change in price was -9.2 per cent. The difference is explained by the difference in property price portfolios in the different indices, where the biannual index contains a much larger percentage of listed property companies.

64 Investment Property Databank (2009), press releases.

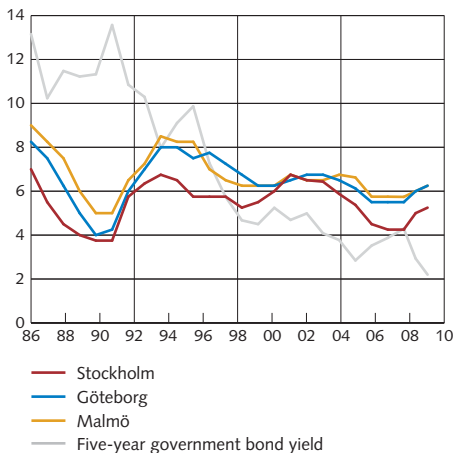
Chart 2:29. Real prices of office premises in city centres
Index 1981=100



Note. To take into account inflation, the prices have been deflated by the CPI. This makes it possible to compare the prices over time.

Sources: Newsec and the Riksbank

Chart 2:30. Average yield levels for modern office premises in city centres
Per cent



Sources: Newsec and Reuters EcoWin

and smallest price falls respectively over the past year (see Chart 2:28). In an international comparison, however, it does not appear that any specific property segment has overall had a more positive development in value than any other. For example, offices have shown the largest price falls in Sweden, Ireland, the Netherlands and the United Kingdom, while the largest price falls in France and Spain have been in industrial premises and retail respectively. Among the city centre locations in Sweden the largest fall in prices has been on office premises in Stockholm (see Chart 2:29). As a result of the financial crisis and the general deterioration in economic activity, the demand for commercial property as an investment object has declined. Similarly, the demand for commercial premises from tenants of office, retail and industrial premises has declined as a result in turn of declining demand for the respective tenant's goods and services.

The falling prices are first and foremost explained by yield levels continuing to rise.

The rising yield levels are due to the fact that in the wake of the crisis investors are now demanding higher compensation, that is, risk premiums, for investing in property (see Chart 2:30). As the price that an investor is prepared to pay for a property corresponds to the ratio between the net operating income generated by the property and the yield of the property, these increased yield levels mean that the property prices have continued to fall. In the same way as these higher yields are what is currently explaining the downturn in property values, it was the earlier low yields that explained the rise in prices in the years 2003–2007. As most investors are now acting cautiously and the recession is expected to continue for a while, the yield levels are expected to continue rising and commercial property prices are consequently expected to continue falling.⁶⁵

At the same time, investment in the market for Swedish commercial property has continued to decline.

This has also contributed to prices continuing to fall. It is first and foremost the foreign investors' reduced presence that has had an impact. In 2008 foreign investment represented 25 per cent of the total transaction volume while in 2007 it represented almost 60 per cent. Among the business carried out in 2008, the dominant news was AP Fastigheter's acquisition of state-owned Vasakronan in July 2008. This came to be the largest property deal ever made in Sweden and counteracted the downturn in transaction volume. Including AP Fastigheter's acquisition of Vasakronan for SEK 41 billion, the total transaction volume in the Swedish commercial property market amounted in 2008 to SEK 133 billion, which can be compared with SEK 146 billion in 2007.⁶⁶ The transactions that are nevertheless made are of a smaller size.⁶⁷

⁶⁵ One probable development is that the yield levels for property of poorer quality in poorer locations will increase more than the yield levels for property of better quality in better locations.

⁶⁶ See Newsec (2009), "Nordic Spring Report", March.

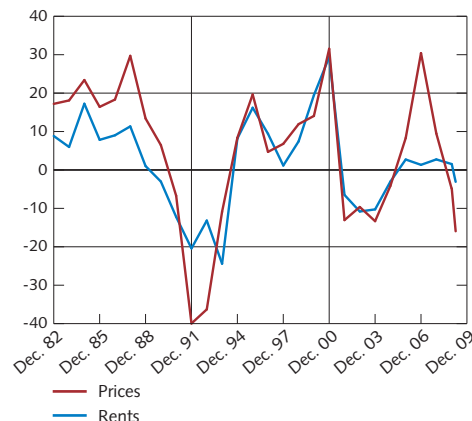
⁶⁷ See, for example, the discussion in Affärsvärlden magazine on 11 March 2009.

The reduced investment is largely explained by liquidity problems.

The investors who have nevertheless been active in the Swedish commercial property market in 2008 have in general been less leveraged than before and therefore affected to a lesser extent by the banks' stricter lending standards.⁶⁸ On the other hand, the foreign investors who were earlier active in the Swedish investment market have been relatively highly leveraged in their investments. Now that it has become more difficult to obtain loans, foreign investment has also declined. Property analysts have further made the assessment that the foreign investors who are active outside their own domestic markets will probably turn to markets where they judge prices to be closer to bottom than in the Swedish market.⁶⁹

The rental market has begun to weaken and is yet another reason why property prices are expected to continue falling. Rents have so far been fairly good, while the vacancy rates, that is, the percentage of premises not let, have been low (see Charts 2:31–2:34). This has meant that property owners' rent income and net operating income has increased. As employment and household consumption decline and demand for companies' goods and services decrease⁷⁰ the demand for premises is expected to decline and the number of vacancies to increase. This is because the risk increases that tenants will go bankrupt and that tenants may for cost reasons need to begin renting smaller premises or alternatively move to cheaper premises in less attractive locations. Property owners may thus be forced to renegotiate rent contracts at lower levels. As a result of rent agreements having a fixed period of three to five years, rents are stickier than house prices. During the first quarter of 2009 the vacancy rates for office premises in Stockholm city centre have increased and rents have fallen slightly (see Chart 2:34). A reasonable assessment is that vacancies will also increase in other parts of the country and that rents will fall in a similar pattern. Despite the fact that construction investment in premises will decline over the coming years⁷¹ there will be a number of new offices⁷² and new retail premises built⁷³, which contributes further to an increase in vacancies and falling rents, and falling prices on this type of property.

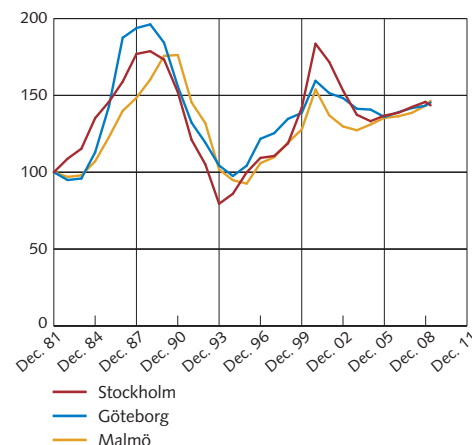
Chart 2:31. Real prices and rents of office premises in Stockholm city centre
Annual percentage change



Note. To take into account inflation, the prices have been deflated by the CPI. This makes it possible to compare the prices over time.

Sources: Newsec and the Riksbank

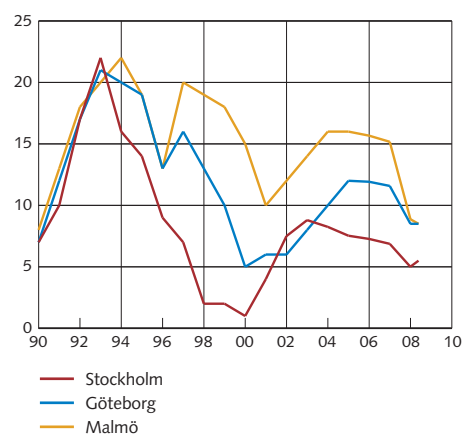
Chart 2:32. Real rents of office premises in city centres
Index 1981=100



Note. To take into account inflation, the prices have been deflated by the CPI. This makes it possible to compare the prices over time.

Sources: Newsec and the Riksbank

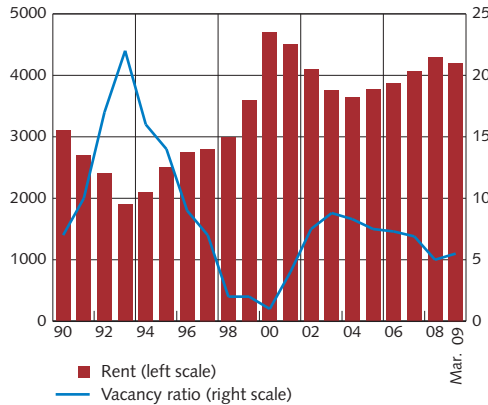
Chart 2:33. Vacancy rate for office premises in city centres
Per cent



Sources: Newsec and the Riksbank

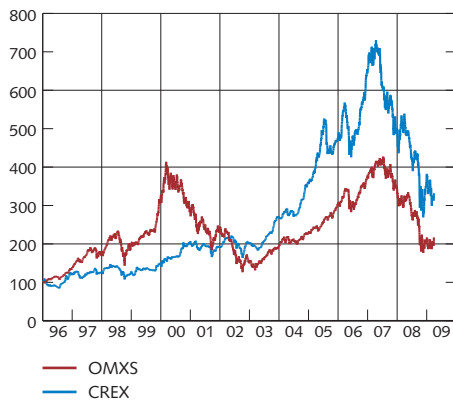
68 See Newsec (2009), "Nordic Spring Report", March.
 69 A comment made by property consultant Jones Lang LaSalle, in Dagens Industri newspaper on 2 March 2009.
 70 See Sveriges Riksbank (2009), "Monetary Policy Update", April.
 71 See the Swedish Construction Federation (2009), "Byggnkonjunkturen", no. 2, May (survey of economic activity in the construction industry).
 72 See Jones Lang LaSalle Nordic City Report Spring 2009 and the comment by the property consultant Jones Lang LaSalle, at www.SvD.se, made on 14 April 2009.
 73 See Newsec (2009), "Nordic Spring Report", March.

Chart 2:34. Vacancy rate and nominal rents for office premises in Stockholm city centre
Per cent, SEK per square metre and year



Sources: Newsec and the Riksbank

Chart 2:35. Price development of property shares
Index 29 December 1995 = 100



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 refers to OMX Stockholm.

Sources: Reuters EcoWin and the Riksbank

THE PROPERTY COMPANIES

The property companies' financial position has begun to deteriorate.

This is indicated by the number of bankruptcies in the total property sector having continued to increase in recent months.⁷⁴ Even if none of the listed property companies has gone bankrupt, their financial position has deteriorated, for instance, in the form of the interest-bearing liabilities having increased during the report period in most of the listed property companies.⁷⁵ Both the debt/equity ratio and solvency in the companies has thus deteriorated on the whole. In addition, the loan-to-value ratios have increased slightly on the whole, which can be explained by the fact that the interest-bearing liabilities have increased and the properties' values have declined. Despite the fact that rent income has shown a positive development and entailed increased net operating income as a result of the good growth in the rental market up to now and thereby good cash flows, the property companies' results have deteriorated substantially, with a number of property companies experiencing negative results. This is because most of the listed property companies have made extensive write-downs of the value of their property stock in the form of unrealised changes in value.⁷⁶

The property companies' current debt servicing ability is fairly good, but has deteriorated. The listed property companies have during the report period had an interest coverage ratio that has meant that the property companies have generated sufficient cash flows to be able to meet their interest payments. The high interest rates last autumn constituted a threat to the property companies' debt servicing ability, although this has been staved off by the Riksbank's extensive interest rate cuts. However, some concern has been expressed over an increased risk premium in the banks' lending which could to some extent cancel out the effect of the interest rate cuts.⁷⁷ In a comparison with the property crisis of the 1990s, however, the current interest rate situation is much more beneficial for the property companies.

Prices of property shares have largely followed general share prices in recent years. Since the beginning of the 2000s, prices of property shares, that is, shares in property companies, have shown a slightly more positive development than the NASDAQ OMX Stockholm on the whole (see Chart 2:35). The downswing in property share prices and in the OMXS that began in the second half of 2007 is explained

74 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 May 2008 to April 2009 to 67, which can be compared with 48 during the twelve-month period May 2007 to April 2008.

75 The 17 property companies listed on NASDAQ OMX Stockholm are the property companies best covered by statistics and the analysis of financial ratios thus focuses these property companies. The report period refers to January to March 2009. Unless otherwise stated, comparisons are made with the corresponding period in the previous year.

76 In accordance with the IFRS accounting regulations such changes in value are to be reported in both the companies' profit and loss accounts and their balance sheets.

77 See, for instance, "Lättat räntetryck ger bolagen spelrum" (reduced interest rate pressure gives companies better scope), Fastighetsvärlden magazine 3/2009.

by the general uncertainty in the financial markets. The stock market's evaluation of the property companies in terms of market capitalisation has followed the same pattern and fallen since the middle of 2007 to the lowest level in five years.

The property companies' borrowing from the four major Swedish banks has continued to increase during the fourth quarter, albeit at a slower rate.⁷⁸ There are also signs that the property companies, like the property sector as a whole, have experienced difficulty in obtaining external funding in the form of, for instance, bank loans as a result of stricter lending standards and higher lending margins. At the same time, economic activity is declining rapidly. This has meant that the property companies and the non-financial corporate sector are experiencing increasing difficulty in making new investments (see the section The Swedish corporate sector).⁷⁹ Given that investment in the commercial property market has declined, the assessment is that the demand for credit will decrease.

Some concern has been expressed that foreign banks have begun to leave the Swedish commercial property market.⁸⁰ If the Swedish banks would not have the opportunity to refinance the property companies' loans from foreign banks, it could in a worst case scenario mean that the companies were forced to sell the properties. This would in turn mean that commercial property prices as a whole were pushed down. However, the Swedish listed property companies appear on the whole to be less dependent on foreign bank funding.⁸¹ The fact that foreign banks have reduced their presence in Sweden and in the Swedish commercial property market thus does not need to have decisive significance for these property companies' possibilities to obtain funding. However, there may be other types of participants who may experience difficulties in refinancing their loans or obtaining funding from the Swedish banks. In addition, a withdrawal of foreign financiers could mean a further element of uncertainty in the Swedish commercial property market, which might make it appear less attractive.

The property companies' debt servicing ability and credit quality are expected to deteriorate as a result of the recession. A recession naturally means that the property companies' possibilities to obtain rent income deteriorates. This is because demand for rented premises

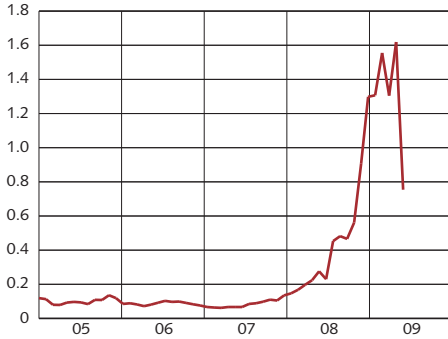
78 The lending rate refers to the annual percentage change in lending during the fourth quarter of 2008, compared with the fourth quarter of 2007.

79 See, for instance, the Riksbank's "Company interviews December 2008-January 2009", ALMI's loan indicator April 2009, National Institute of Economic Research's Economic Tendency Survey April 2009. This is also indicated by the contacts the Riksbank has had with a selection of property companies. It is worth mentioning the Economic Tendency Survey's result that the construction industry is the area of the business sector that is claiming to have the biggest problems obtaining funding. The construction industry's opportunities for funding and investment are closely related to the property companies' opportunities to implement the intended investment projects.

80 See, for instance, the discussion in Affärsvärlden 11 March 2009.

81 This data is according to a general telephone survey carried out by the Riksbank among a selection of Swedish listed property companies.

Chart 2:36. The property companies' credit quality measured according to the EDF
Per cent



Source: Moody's KMV Credit Edge

declines as a result of lower employment and a decline in demand for goods and services. It is therefore probable that the number of newly-signed rent agreements will decline, at the same time as the existing rent agreements may be renegotiated at lower rents. Given the poorer prospects in the rental market, the assessment is that the property companies' debt servicing ability will deteriorate. This assessment is also confirmed by the expected default frequency one year ahead among listed property companies having increased (see Chart 2:36).⁸² To summarise, this means that the credit risk in the banks' lending to property companies has increased.

If the value of commercial properties continues to fall, the credit risk in the banks' lending to property companies will be greater. If the property companies were to experience a situation where they are unable to pay the interest on their bank loans, the banks may call in the property assets used as collateral and decide on forced sales. Given the large falls in value in the commercial property market, this would entail a risk that the income from such sales did not correspond to the value of the initial loans and that the banks thus made losses.

To summarise, the credit risk in the banks' lending to the property companies will increase in the future, as will that in the corporate sector as a whole. This is because of the poorer economic prospects and thus poorer earnings capacity for the property companies. It means that the property companies' debt servicing ability will deteriorate. At the same time, further price falls can be expected on commercial property, which means an increased credit risk for the banks, as the value of the banks' collateral for the loans given in the form of property credits will decline. The current financial crisis also entails an element of uncertainty with regard to the property companies' possibilities to find external funding in the form of bank loans and wholesale funding. In a comparison with the situation during the property crisis in Sweden in the 1990s, however, the current interest rate situation is more beneficial for the property companies. In addition, it is usually claimed that the banks have learned their lesson from the experiences of the 1990s and now focus to a greater extent on the property companies' cash flows rather than on loan-to-value ratios, which means that the recent price fall has relatively less significance. Compared with the 1990s, the current loan-to-value ratios among property companies are in general lower; only a few of the 100 largest property owners currently has a loan-to-value ratio of more than 75 per cent.⁸³ This means that the property companies are currently better equipped to cope if the value of their property assets were to fall further. However, the banks' stricter

82 According to the forward-looking EDF (Expected Default Frequency) indicator that reflects the probability of a company's assets being lower than the value of its debts when they fall due for payment. The EDF is only calculated for the listed property companies, which is why the assumption on the probability of an expected default mainly applies to these companies.

83 See the Swedish Construction Federation (2009), "Byggnationens konjunktur" (survey of economic activity in the construction industry), no. 1 February.

lending standards on lower loan-to-value ratios could be decisive when the property companies need to refinance their outstanding loans.

The Swedish banks' borrowers abroad

The Swedish banks are to a great extent active outside of Sweden. With half of their lending going outside of Sweden, the banks' activities abroad are equally 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 the Ukraine. The lending is relatively evenly distributed between foreign and Swedish households, while foreign companies constitute a slightly larger percentage than Swedish ones (see Chart 2:1).

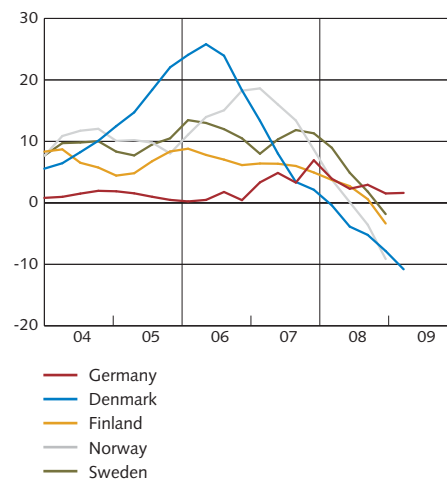
The Swedish banks constitute an important part of the banking system in the Baltic countries. This means that developments in these countries are important to the Swedish financial system. The Swedish banks' lending to the Ukraine is relatively small. Given the country's very poor economic developments, however, the probability of loan losses in the banks' lending there is substantial.

NORDIC COUNTRIES EXCLUDING SWEDEN AND GERMANY

Economic activity is declining rapidly in the Nordic countries and in Germany. The financial crisis has now had a distinct impact on the real economy. In Denmark and Finland GDP is expected to fall by 3.0 per cent and 3.7 per cent respectively in 2009, while Norway will manage slightly better with a decline of 1.0 per cent.⁸⁴ Denmark has been hardest hit so far; during the fourth quarter of 2008 GDP fell by 3.5 per cent, compared with the fourth quarter of 2007, followed by Finland, where GDP fell by 1.75 per cent. Norway was the only country to show weak positive growth of 0.35 per cent. A sharper downturn is expected in Germany than in the other euro countries. GDP is expected to fall by 5.0 per cent compared with 3.7 per cent for the euro area as a whole. Unemployment remains low in Denmark (2.9 per cent in March) and Norway (3.1 per cent in February) while it is higher in Finland (8.3 per cent in March). In Germany unemployment amounted to 7.6 per cent in March and in all countries the figures are expected to rise throughout 2009. The crisis is also clearly reflected in house prices (see Chart 2:37), with falling prices in all Nordic countries.

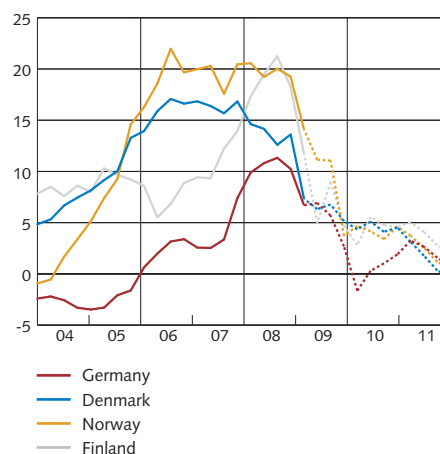
As a result of the increasingly gloomy economic outlook, borrowing by Nordic companies and households is expected to increase at a slower rate in future, and in some cases decline (see Charts 2:38 and 2:39). However, in Germany developments differ with regard to households, which have a relatively low indebtedness in relation

Chart 2:37. House prices
Annual percentage change



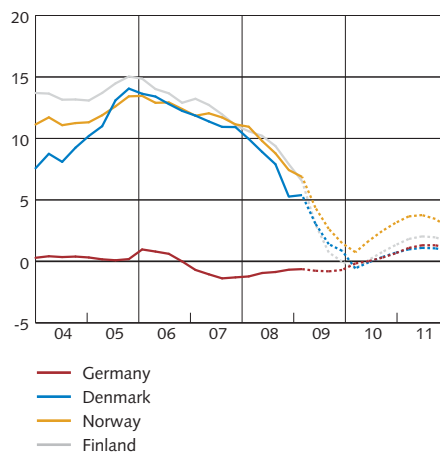
Sources: Reuters EcoWin and the BIS

Chart 2:38. Companies' borrowings
Annual percentage change



Sources: Reuters EcoWin and the Riksbank

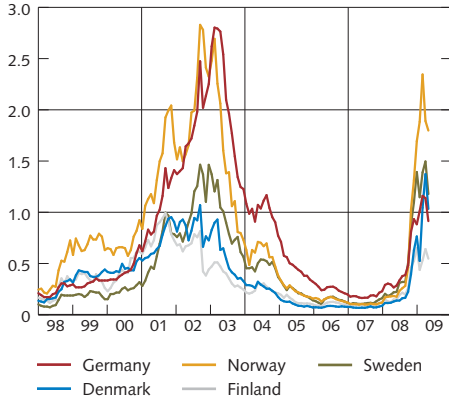
Chart 2:39. Households' borrowings
Annual percentage change



Sources: Reuters EcoWin, ECB and the Riksbank

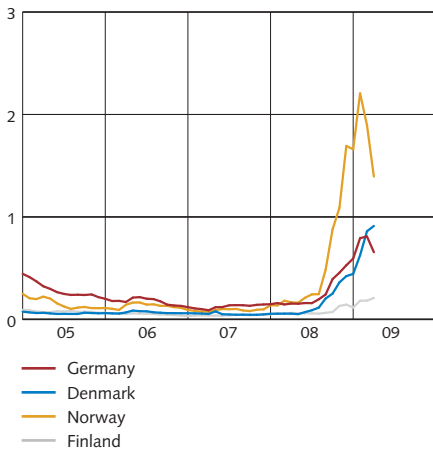
84 See Consensus Forecast Inc. (2009), "Consensus Forecasts", May.

Chart 2:40. Expected default frequency for listed non-financial companies
Per cent



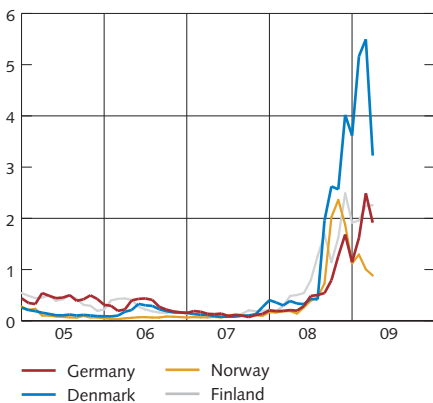
Source: Moody's KMV Credit Edge

Chart 2:41. Expected default frequency for transport companies
Per cent



Source: Moody's KMV Credit Edge

Chart 2:42. Expected default frequency for construction companies
Per cent



Source: Moody's KMV Credit Edge

to households in the Nordic countries, around 100 per cent of their disposable income. German households' borrowing from credit institutions has declined over the past two years, which means in net terms that they have amortised their debts. Their borrowing is expected to increase marginally.

Despite a sudden downturn, the ability to service debt is expected to be good on the whole. Household's financial situations are currently good in general. However, unemployment is expected to rise in the future, which will contribute to households' margins declining in coming years. However, in Denmark and Finland tax cuts will contribute to increasing working households' disposable incomes during 2009. In Norway, large fiscal policy stimulus is expected to compensate to some extent for the fall in demand caused by the decline in household consumption. The German government is also conducting a very expansionary fiscal policy, which together with an unusually high rate of wage increase in 2008 is expected to contribute to keeping up households' disposable incomes in 2009. Although the risk in lending to households will increase slightly in 2009 and 2010, the recovery rate after household defaults is expected to remain high. All in all, households in the other Nordic countries and Germany should not constitute any substantial risk for the banks in terms of loan losses. If the labour market deteriorates more than expected, however, more households will suffer payment problems.

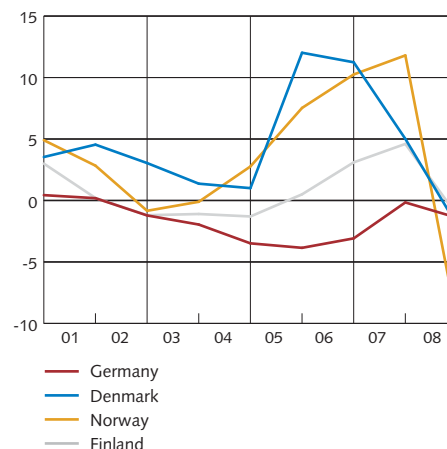
Companies' default risk has increased substantially in both the Nordic countries and in Germany. This applies in particular to Norway, where the risk has approached the same levels that prevailed during the IT crisis (see Chart 2:40). This is expected to lead to a decline in both the supply of and demand for credit in 2009, and to increased loan losses. For one thing the banks are expected to be more cautious in their lending, and for another companies' willingness to invest will fall as a result of the decline in demand. The industries to which the Swedish banks are particularly exposed, and which are also very sensitive to fluctuations in economic activity, are the property and transport sectors, particularly in Norway (see Chart 2:41). All in all, the Swedish banks have lent around SEK 200 billion to foreign transport companies (excluding the Baltic countries), most of which was to companies in other Nordic countries. Shipping companies that are included in the transport sectors have been particularly hard hit by the recession and the default frequency has increased more for these companies than for the sector as a whole. In the construction industry, too, the estimated default frequency has increased significantly, particularly in Denmark (see Chart 2:42). Swedish banks' exposure to construction companies is relatively small, however, around SEK 40 billion (excluding the Baltic countries).

In Germany the economic crisis has dealt a severe blow to the export-dependent companies. In the export sector total orders declined heavily during the first two months of the year.⁸⁵ The manufacturing industry is expected to reduce its sales and the German motor vehicle industry is particularly vulnerable. However, when looking at the manufacturing industry as a whole, the default risk in all countries is lower than the average in the corporate sector as a whole. Moreover, the German government is trying to support car sales in a fiscal policy package, with an initial good result. However, falling demand is expected to lead in general to lower gross investment in the German companies, which in turn should dampen the growth rate in corporate borrowing. German companies have borrowed more cautiously than Nordic companies in recent years and should therefore be more easily able to manage their credit costs during the recession (see Chart 2:38). As with other Nordic companies, the default risk has increased in both the property and transport sectors, however these levels are in line with other companies and probably do not entail a strong risk factor. However, the declining economic activity will probably entail a sharp fall in gross investment in all of the Nordic countries and companies' demand for credit will thus fall.

Commercial property prices are falling in the Nordic countries and in Germany (see Chart 2:43). However, in Germany a stable rental market has been able to ensure good earnings for commercial property companies, which has also counteracted the increased direct return requirement and thereby dampened the price fall.⁸⁶ In Finland, the price fall has also been limited so far, which can be partly explained by a continued rise in housing rents in 2008 and stable earnings on office premises. Norway has so far been hit hardest by the recession and the price fall there is much larger than in the other Nordic countries; here it is mainly office premises that have contributed to the fall.

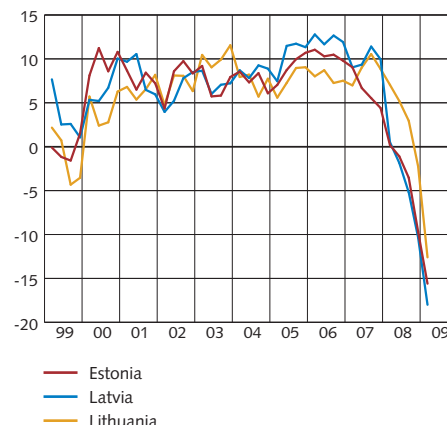
To summarise, risk among borrowers in other Nordic countries and in Germany will increase in 2009. On the corporate side, Norway stands out with a substantial increase in default risks one year ahead. Both companies and households are expected to borrow at a much more cautious pace than before. However, despite the decline, both households and companies are assessed as having good conditions for maintaining their ability to pay even during the recession. The risks lie mainly in the developments in the labour market, where there is currently great uncertainty regarding unemployment levels in the coming years. Denmark and Norway are still at low levels, but if unemployment were to increase more than anticipated, more

Chart 2:43. Commercial property prices
Annual percentage change



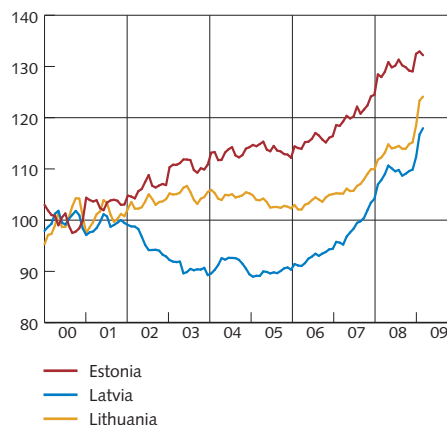
Sources: Reuters EcoWin, IPD and the Riksbank

Chart 2:44. GDP
Annual percentage change



Source: Reuters EcoWin

Chart 2:45. Real exchange rates for the Baltic countries
Index 2000=100



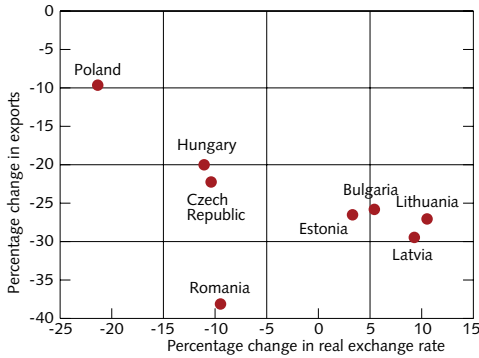
Note. The exchange rate has been adjusted by the price level (CPI). The scale is inverted so a lower value means a weaker exchange rate. Based on the CPI.

Source: The BIS

85 See Bundesbank (2009), "Monthly Report", April.

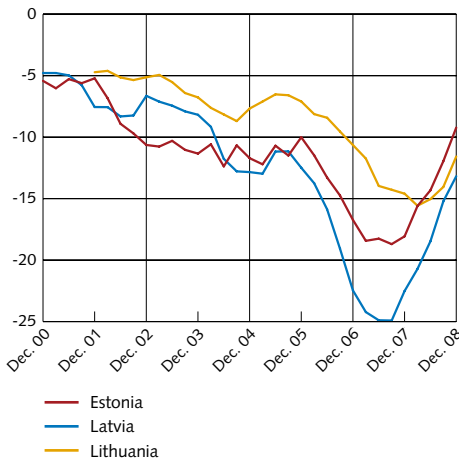
86 See IPD Press Release 2nd April 2009, "German property returns reveal minor correction in values, says IPD".

Diagram 2:46. Change in export and real exchange rates for various countries
Per cent



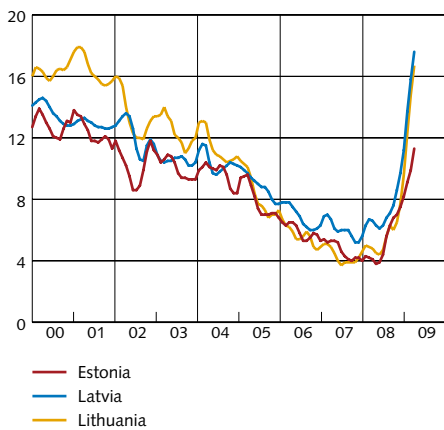
Note. Refers to the change between February 2008 and February 2009.
Sources: BIS and Reuters EcoWin

Chart 2:47. Current account
Percentage of GDP, totalled over four quarters



Source: Reuters EcoWin

Chart 2:48. Unemployment
Per cent



Source: Eurostat

households would experience difficulties making payments. However, the recovery rate regarding household defaults is expected to remain high. The Swedish banks have high-risk exposures to foreign companies in the property and transport sectors. These are expected to cause increasing loan losses during 2009, primarily in Norway and Denmark. The construction industry has also been affected by increased default risks, however here Swedish banks' exposures are much less than against commercial property, for instance.

THE BALTIC COUNTRIES

The economic situation in the Baltic countries has deteriorated substantially. As a result of the financial crisis and the global recession, GDP fell heavily in both Estonia and Latvia at the end of last year. GDP fell in Lithuania, too, but not as much as in the other two countries. The decline in GDP intensified in all three countries during the first quarter of this year (see Chart 2:44). Despite the fact that market analysts were counting on a substantial decline in economic activity, it arrived sooner and has been deeper than expected. The weaker outcome is primarily due to domestic demand having continued to deteriorate, which has led to imports falling.

External demand has also begun to decline and exports are falling in all three countries. This is to some extent explained by the high domestic cost pressures in these countries and the fact that their real exchange rates have appreciated, which means that their competitiveness has deteriorated (see Chart 2:45). However, the most important factor behind the fall in exports is probably the weaker global demand. This is illustrated by the fact that exports have fallen roughly as much in the eastern and central European countries whose currencies have depreciated (see Chart 2:46).⁸⁷ A substantial share of the trading in the Baltic region is between the Baltic countries, which is an aggravating factor as the recession is much deeper there than in many other countries. The effect is probably greatest in Latvia, where 30 per cent of exports is to other Baltic countries (see Table 2:1). Other important trading partners include Russia, and in the case of Estonia, Sweden and Finland. The currencies of both Russia and Sweden have weakened significantly, which affects these countries' demand for export goods and thus also the export prospects for the Baltic countries. Although external demand has fallen rapidly, however, domestic demand has fallen even more rapidly. This means that the previously large current account deficits are now quickly declining, although the countries are still in need of capital inflows (see Chart 2:47).

⁸⁷ Very recently the currencies in many eastern European countries have appreciated, but they are still weaker than they were prior to the crisis breaking out. See the box Developments in eastern Europe.

Table 2:1. The Baltic countries' five largest trading partners
Percentage of total exports

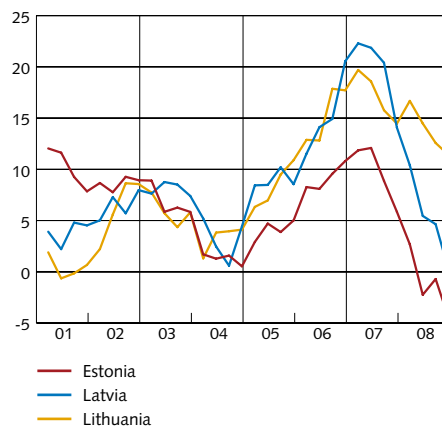
Estonia	Latvia	Lithuania
Finland (18)	Lithuania (16)	Russia (15)
Sweden (13)	Estonia (14)	Latvia (13)
Latvia (11)	Russia (10)	Germany (10)
Russia (9)	Germany (9)	Poland (6)
Lithuania (6)	Sweden (8)	Estonia (6)

Sources: National statistics agencies

The recession has now made an impact on the labour market. In all three countries unemployment has risen very quickly in recent months (see Chart 2:48). At the same time, nominal wages are not increasing as much as before. In Estonia and in several sectors in Latvia, nominal wages are falling. In Latvia extensive tightening has begun in the public sector as part of the work to restore the country's competitiveness in accordance with the conditions of the support given by the International Monetary Fund (IMF) and the EU. This means that wages in the country's public sector will be cut substantially this year, which will in turn provide an incentive for wage cuts in the private sector, too. The Estonian parliament has voted for an addition to the budget that entails lower wages in the public sector. Real wages have begun to fall in Estonia, while the rate of increase has declined in Latvia (see Chart 2:49). Wages are also being cut in Lithuania. Even though inflation has recently fallen rapidly, it is still fairly high in both Latvia and Lithuania. In both of these countries the annual inflation rate amounted to just below six per cent in April. At the same time, inflation in Estonia was just below one per cent (see Chart 2:50). VAT has been raised in Latvia and Lithuania, which may have contributed to the rise in inflation.

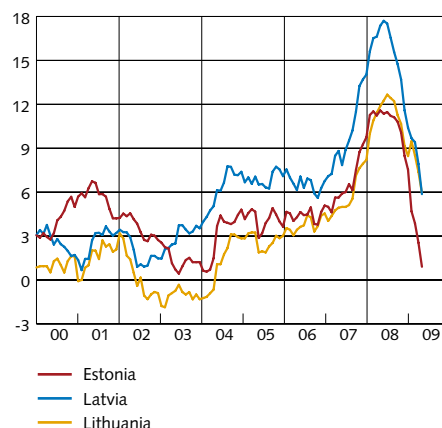
The economic downturn in the Baltic countries may be prolonged. During 2009 GDP is expected to fall substantially in all three Baltic countries, especially in Latvia where GDP is expected to fall 15 per cent.⁸⁸ Consumer confidence has increased slightly in Estonia and Latvia during the spring, although it is still very low in all three Baltic countries (see Chart 2:51). At the same time, the situation in these countries' labour markets is expected to deteriorate. This indicates that domestic demand will continue to fall. In addition, the global recession is deepening, which means that external demand is expected to continue to weaken. The Baltic countries' competitiveness is expected to be gradually restored as fiscal policy tightening has an impact on domestic demand, and as wages and prices are pushed down. The weak currencies in other export countries may continue to hold back demand for the Baltic countries' exports. In addition, inflation in Lithuania may rise again as energy prices are expected to increase when the Ignalina nuclear power station closes at the end of

Chart 2:49. Real wages
Annual percentage change



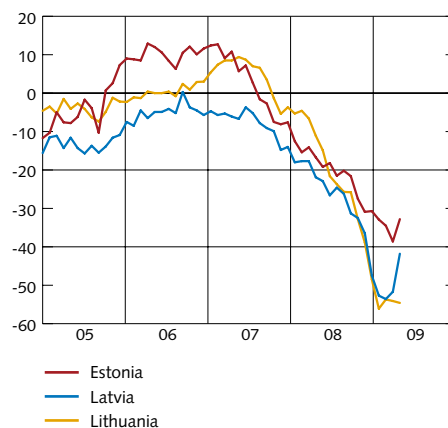
Sources: Reuters EcoWin and the Riksbank

Chart 2:50. Harmonised index for consumer prices
Annual percentage change



Source: Reuters EcoWin

Chart 2:51. Consumer confidence indicator
Net figures, per cent

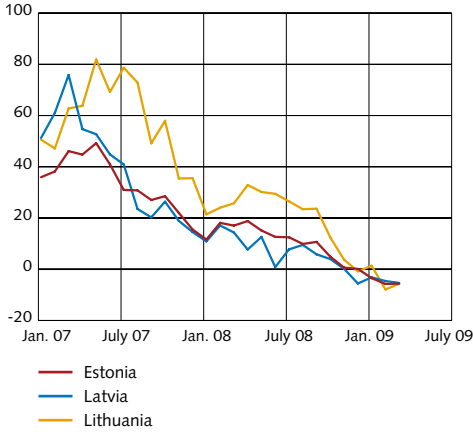


Note. The confidence indicator is a weighing together of various questions about the respondent's own financial situation and the general state of the economy in the next twelve months. The net figures are defined as the proportion of respondents who reply positively less the proportion of respondents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

Source: European Commission

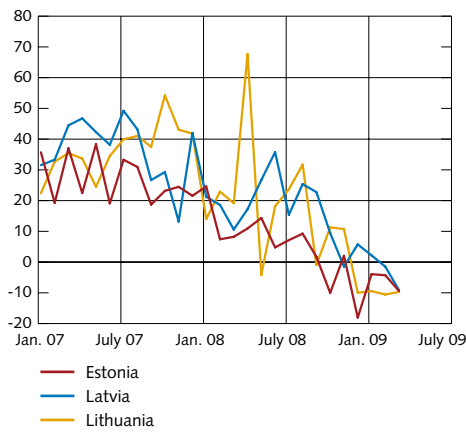
88 Consensus Economics Inc. (2009), "Eastern Europe Consensus Forecasts," May.

Chart 2:52. Household borrowing
Percentage change from the previous month, calculated as an annual rate



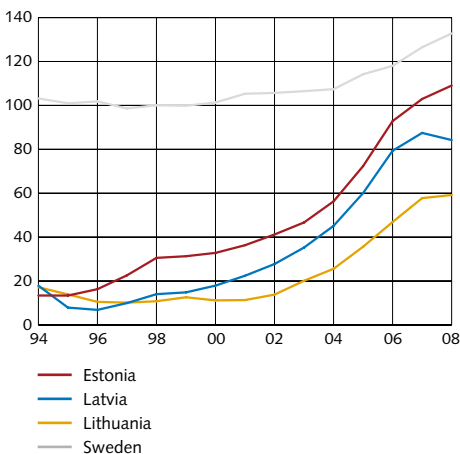
Sources: National central banks, Reuters EcoWin and the Riksbank

Chart 2:53. Corporate borrowing
Percentage change from the previous month, calculated as an annual rate



Sources: National central banks, Reuters EcoWin and the Riksbank

Chart 2:54. Households' and companies' debts in relation to GDP in the Baltic countries and Sweden
Per cent



Sources: National central banks and Reuters EcoWin

the year. All in all, this means that the GDP forecasts for 2009 may be revised down further. It also means that the current account deficit will continue to shrink, but that it will still be lower imports driving developments rather than increased exports.

The weaker economic activity means that the budget deficits will increase in all three countries. At present market participants are expecting the budget deficit this year to amount to 3.9 per cent of GDP in Estonia, 7.2 per cent in Latvia and 4.6 per cent in Lithuania.⁸⁹ This means that the deficit in Latvia will be greater than the five per cent that the IMF and EU have set as conditions for the loan of EUR 7.5 billion granted to the country at the end of last year. The reason why the deficit is expected to be larger is that economic activity has weakened much more than was anticipated when the loan was granted. The countries' opportunities to issue government bonds to cover the budget deficits are limited, however. Estonia has in recent years build up fiscal policy reserves corresponding to 10 per cent of GDP which to some extent reduces the borrowing requirement. However, the strains on the reserves will increase if economic activity deteriorates further.

Household and corporate borrowing has begun to fall in some of the Baltic countries (see Charts 2:52 and 2:53). The gloomy economic prospects have meant that the demand for credit has declined. At the same time, the supply has been tightened as a result of the deterioration in the quality of the credit. Most of the loans are taken in foreign currency, mainly in euro. In Latvia the percentage of loans in foreign currency is 90 per cent, while in Estonia and Lithuania the borrowers' figures are 85 and 60 per cent respectively. At the same time, the incomes are largely in local currencies, which can entail difficulties for the borrowers if the fixed exchange rates are threatened. The lower borrowing has meant that households' and companies' debts in relation to GDP have begun to fall in Latvia. In the other countries the quota has continued to increase, particularly in Estonia (see Chart 2:54). At the same time as demand for loans is declining, house prices are also falling. During the third quarter of 2008 real house prices, that is house prices adjusted for inflation, fell by around 25 per cent in Estonia. In Latvia and Lithuania they fell by 35 and 27 per cent respectively in 2008 as a whole. This means that house prices in the Baltic countries have fallen more than any other in Europe. Commercial property prices have also begun to fall.⁹⁰

Borrowing by households and companies is expected to continue to fall. This is partly because private consumption and corporate

⁸⁹ See Eastern Europe Consensus Forecasts (2009), May. The budget deficit for 2008 is expected to amount to 3.0 per cent of GDP in Estonia, 4 per cent in Latvia and 3.2 per cent in Lithuania

⁹⁰ See Global Property Guide and Newsec Nordic Report Spring (2009). Housing prices are measured in different ways in different countries. This makes it inappropriate to make direct comparisons between the countries, particularly for limited periods of time.

investment are expected to continue to develop weakly. At the same time, their credit ratings are expected to deteriorate as the economic downturn progresses. It will then be both more expensive and more difficult to obtain loans. Moreover, the banks will continue to be more restrictive in their credit granting.

Households' and companies' debt-servicing ability has weakened.

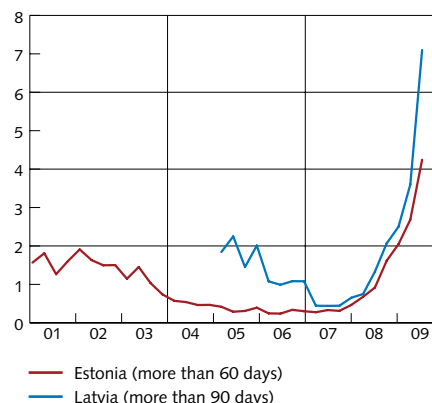
This can be noted not least in that the number of late payments has continue to increase rapidly (see Chart 2:55). This is because unemployment has risen rapidly and the number of defaults in the corporate sector has increased. In Estonia companies account for 60 per cent of the late payments, a share that has gradually increased in recent months.

The debt-servicing ability is expected to continue to deteriorate.

Companies' earnings are expected to decline as the recession deepens, which means that profitability will decrease. This in turn means that the probability of a company being unable to repay its loan, and thereby the risk of default, increases. Profitability can also be affected by the real interest rate. Real interest rates have long been very negative in the Baltic countries. But as inflation is declining rapidly, there is a risk that real interest rates may suddenly rise. If companies have counted on negative real interest rates in their profit calculations the current value of future expected profits is now threatening to decline rapidly. At the same time, the loan burden remains unchanged. With regard to households, rising unemployment will contribute to weakening the debt-servicing ability. On the other hand, interest rates on loans have fallen substantially, which reduces the pressure on households' and companies' balance sheets.

To summarise, the recession in the Baltic countries is expected to deepen. This is partly because domestic demand will continue to weaken and partly because external demand will decline as international economic activity weakens. Weaker economic activity means that borrowers' ability to pay will weaken and credit quality will deteriorate. This in turn means that the banks are becoming more restrictive in their credit granting and that the cost of loans is rising, which further contributes to weakening the ability to pay. The gloomy economic prospects also mean that borrowers are becoming more cautious with regard to taking on more loans. Lending is therefore expected to continue to decline.

Chart 2:55. Late payments in Estonia and Latvia
Per cent of outstanding loans



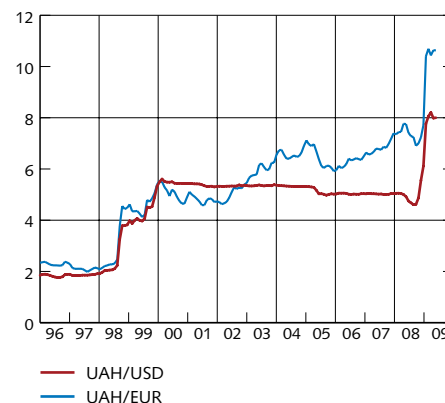
Sources: Eesti Pank and the Financial and Capital Market Commission

Figure 2:56. Industrial production in Ukraine
Annual percentage change



Sources: Reuters EcoWin, the State Statistics Committee of Ukraine and the Riksbank

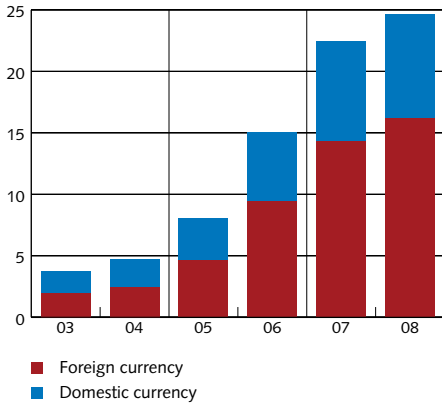
Chart 2:57. Exchange rates
Hryvnia per dollar and per euro



Note. The spot rate is stated as daily listings converted into monthly figures.

Source: Reuters EcoWin

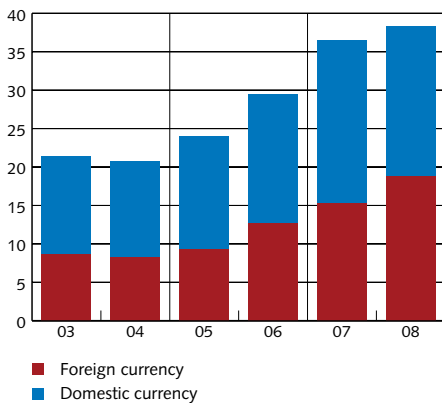
Chart 2:58. Households' bank borrowing in foreign and domestic currency in Ukraine
Per cent of nominal GDP



Note. The year 2008 observation for bank borrowing refers to per 31 October 2008.

Sources: Reuters EcoWin, the National Bank of Ukraine, the IMF and the Riksbank

Chart 2:59. Non-financial companies' bank borrowing in foreign and domestic currency in Ukraine
Per cent of nominal GDP



Note. The year 2008 observation for bank borrowing refers to per 31 October 2008.

Sources: Reuters EcoWin, the National Bank of Ukraine, the IMF and the Riksbank

UKRAINE

The economic situation in Ukraine is serious. During the fourth quarter of 2008 GDP fell by eight per cent compared with the same period last year, and there are indications that growth will fall much more during the first quarter of this year. The country's GDP is expected to fall by ten per cent in 2009 and to grow by almost one per cent in 2010.⁹¹ A decline in external demand for the country's industrial goods and thereby a fall in exports is one important explanation for the sharp deterioration in developments; industrial production fell by closer to 40 per cent in April, compared with the same period last year (see Chart 2:56). A further explanation is that access to foreign funding has been limited. As a result of the poor economic situation, in November 2008 the Ukraine was granted a loan totalling USD 16.4 billion by the IMF (see the box Developments in Eastern Europe) with a first instalment in November 2008 and a second planned for the beginning of 2009. However, political opposition as to how the country would meet the IMF's requirements led to the second payment not being made until May.

The country's currency, the hryvnia, has weakened substantially over the past six months. It has lost almost 40 per cent of its value against the US dollar (see Chart 2:57). The central bank has made regular interventions in the form of pegging purchases of its own currency to prevent further weakening. The fact that the currency has lost so much in value has entailed difficulties above all for all the households and companies that have borrowed in foreign currencies. Moreover, the premiums for insuring oneself against default of the state of Ukraine are among the highest in the world.

Both companies and households have increased their borrowing from credit institutions at a rapid rate during the past two years.⁹² A large share of the borrowing has taken place in foreign currency (see Charts 2:58 and 2:59). As the income is often in domestic currency, this means that the highly leveraged households and companies are particularly vulnerable when the currency weakens to such a large extent. Households have a larger percentage of their loans in foreign currency than companies.

The debt servicing ability among Ukrainian households and companies has deteriorated. It is also assessed that the debt servicing ability will weaken further as the economic downturn intensifies and thus increases unemployment among households while companies experience poorer earnings potential and fewer orders.

91 See Consensus Economics Inc. (2009), "Eastern Europe Forecasts", May. According to IMF World Economic Outlook April 2009 Ukraine's GDP will fall by eight per cent in 2009 and grow by one per cent in 2010.

92 Companies here refers to non-financial companies.

To summarise, the prospects for borrowers in the Ukraine are gloomy. The negative economic current situation and the apparently very bleak financial and real economic prospects for the state of the Ukraine in general, and the banks' borrowers in particular, point to the number of payment suspensions increasing and to a decrease in lending.

Summary of risks for the borrower sector

All in all the financial conditions for the banks' borrowers have deteriorated since the previous Financial Stability Report. However, there is great uncertainty regarding future economic developments and thus regarding the assessment of different groups of borrowers. This means that there are substantial risks for the borrower sector in the future.

There is a considerable risk that developments in the Baltic countries will continue to deteriorate. This would have even greater negative effects on the borrowers' debt servicing ability and on the banks' loan losses than is currently anticipated. At the same time, investors' risk appetite for Eastern European assets is on the whole slight and the credit rating agencies have gradually downgraded the Baltic countries. For example, Latvia now has a credit rating that is below the investment grade. This means that the international capital markets are to a great extent closed to Latvia and the country is thus dependent on the payments from the IMF and the EU continuing. Several factors indicate that it will take time before the willingness to take risk returns. For instance, the real economic developments entail major challenges for public sector finances in all three of the Baltic countries. Reduced tax income increases the pressure for further cutbacks in expenditure to avoid the budget deficit soaring further. At the same time as reduced expenditure threatens to delay the recovery, excessive budget deficits may delay the introduction of the euro. Another factor is whether the loan granted to Latvia by the IMF is not extended because the country fails to meet the set targets. It could also have consequences for the neighbouring countries, as investors will probably reappraise risk in the region as a whole. If capital flows decline and credit dries up, this will have serious consequences for the real economic recovery. In Ukraine, too, the conditions for borrowers have deteriorated. There is a substantial risk that the situation will worsen there, too.

The uncertainty regarding economic prospects entails a risk of poorer creditworthiness in the corporate sector as a whole. This applies in particular to cyclically-sensitive sectors such as construction and transport. The increased credit risk from the corporate sector may moreover lead to the banks raising their interest rates on new loans, which could mean that it becomes even more expensive for

companies to fund new investment. At the same time, it has become more difficult for companies to acquire capital on the securities market, and they are thus to an increasing extent dependent on bank loans. If the banks do not replace the lack of market funding this may further curb corporate investment and thereby have repercussions on the real economy. There are also signs that large companies' bank borrowing has made it more difficult for smaller companies to obtain bank loans.

There are few indications that the Swedish household sector as a whole will cause any major loan losses in the bank sector. But the longer and deeper the economic crisis becomes, the greater is the risk that households will need to cut back on other expenditure. This affects the real economy in several ways. For example, lower consumption leads to lower earnings in the corporate sector, which in turn means that investment falls.

■ Developments in the banks

Developments at the banks – in brief

The liquidity crisis that dominated the picture for the banks in November 2008, when the previous Stability Report was published, has diminished mainly as a result of the liquidity supplied by the central banks and the introduction of government programmes. The rapid economic downturn has instead emerged as the predominant risk for the major Swedish banks. It appears that the global economy and the Swedish economy are on the verge of the single worst year in the post-war period. This affects the banks in several ways. The loan losses of the major Swedish banks, which have long been insignificant, increased rapidly during the first quarter of this year.

How high the loan losses will be in the period ahead is very uncertain. In the Riksbank's main scenario the loan losses of the four major Swedish banks are expected to total SEK 170 billion in 2009 and 2010. Almost 40 per cent of these losses are expected to stem from the banks' operations in the Baltic countries and other countries in Eastern Europe. The Riksbank assesses that the earnings of the banks will continue to increase in the near future, in part as a result of an increase in net interest income. The rising loan losses, however, mean that profitability will decline in the period ahead.

In order to increase equity capital Swedbank, SEB and Nordea have carried out rights issues in order to increase their Tier 1 capital. All four of the major banks have also either reduced or cancelled dividends to their shareholders. The banks have sufficient capital to cope with the losses arising from the assumptions made in the main scenario and appear to be well-capitalised in an international perspective.

There is, however, a great deal of uncertainty about the development of the economy in the period ahead and its effects on the banks. The Riksbank has therefore conducted a stress test to investigate the banks' resilience to a much more severe global downturn. Even in such a scenario, the banks meet the statutory level for the Tier 1 capital ratio.

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 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.

This chapter begins by examining the effects of the financial crisis on the Swedish banks, followed by a review of the banks' earnings and profitability. Thereafter the banks' lending and the associated risks are described, and this section also contains a presentation of the Riksbank's main scenario for the banks' loan losses. The development of 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 that the Riksbank has carried out.

The effects of the financial crisis on the Swedish banks

Since the financial crisis began in the summer of 2007, various risks have followed one another as the most imminent in the global banking sector. The initial problems related to actual and mark-to-market losses on various financial securities, primarily linked to the US mortgage market, which forced many banks to carry out right issues to avoid insolvency. The next problem for the banking sector was the suspicion of financial institutions that arose following the collapse of Lehman Brothers on 15 September last year. Anxiety concerning the underlying collateral of counterparties and their liquidity situation became tangible among investors, which made them less willing in funding banks. Access to market funding therefore tightened. Consequently, borrowing at longer maturities became expensive, and in certain cases impossible.

Central banks and other authorities around the world have taken extensive measures to facilitate the funding of the banks. In Sweden, the measures have aimed to avert the risk of liquidity problems in the banking system and to improve the functioning of the financial markets. The Riksbank's lending and the government debt instruments' guarantee scheme are the main elements of this safety net. One of the effects of this is that exposures and thereby counterparty risk between the banks has decreased as the Riksbank's lending has to a certain extent replaced the funding that normally takes place on the interbank market.

As the state of the global economy has declined, the credit risk of the banks has become the most prominent risk. This has drawn the Swedish banks more tangibly into the crisis. In the wake of the steeper economic downturn, the credit risk has increased in all sectors and countries. The considerable decline in GDP growth in large parts of the world, including Sweden, is also reflected by the fact that the provisions for expected loan losses of the Swedish banks increased significantly at the end of 2008, although from low levels. Most analysts agree that loan losses will increase in the period ahead, but

there is a great deal of uncertainty about the magnitude of these losses. As a consequence of negative results and the increased risk of future losses, banks all over the world have sought new capital in the form of rights issues and government capital injections. In order to strengthen their capital bases, three of the major Swedish banks have carried out rights issues. Several of the major banks have also issued so-called hybrid Tier 1 capital, which is a cross between equity and debt (see the box "Capital – regulatory capital in accordance with Basel II and economic capital"). In order to further increase their capital, all four major banks have also either reduced or cancelled dividends to the shareholders.

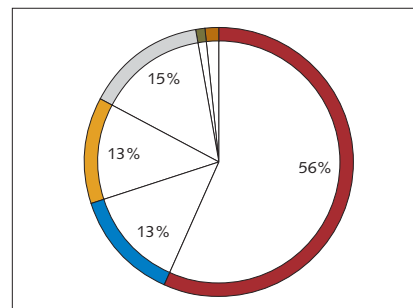
To date, the Swedish banks have not used the government debt instruments' guarantee scheme to the full. In many cases they have instead chosen to shorten the average maturity of their market funding. If uncertainty about the situation increases, it seems reasonable that the banks as a first measure will consider joining the government guarantee scheme. The measures taken by the authorities to promote liquidity have, furthermore, mainly had an impact on the banks' short-term funding, while government guarantees still make it easier to obtain funding at longer maturities.

Earnings and profitability

The Nordic operations are the basis for the profits of the Swedish banks. Approximately 90 per cent of the banks' net operating profits come from the Nordic countries, with Sweden accounting for over half of this sum (see Chart 3:1). The banks' largest income items are net interest income (the difference between interest income and interest expenditure) and net commission (charges for various services and products). Over time, these two items account for just below 90 per cent of earnings. On the cost side, the banks' personnel costs are the largest cost item.

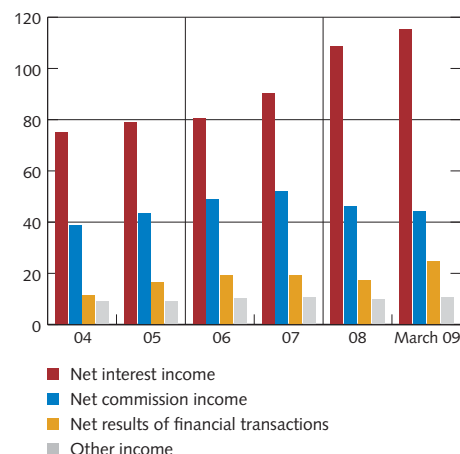
Over the last five years, it is net interest income that has increased most rapidly (Chart 3:2). The main reason for this is that the banks' lending has increased. Most of the lending of the four major banks is in the Nordic countries, although there are differences between the geographical distribution of the banks' lending (see Chart 3:3). Nordea, for example, has a smaller proportion of its 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 seven per cent of the total lending of the major banks. For Swedbank, lending to the Baltic countries accounts for 16 per cent of the bank's total lending, while the corresponding figure for SEB is 12 per cent and for Nordea three per cent (see Table 3:1).

Chart 3:1. Distribution of net operating profits of the major banks, last four-quarter period
Per cent



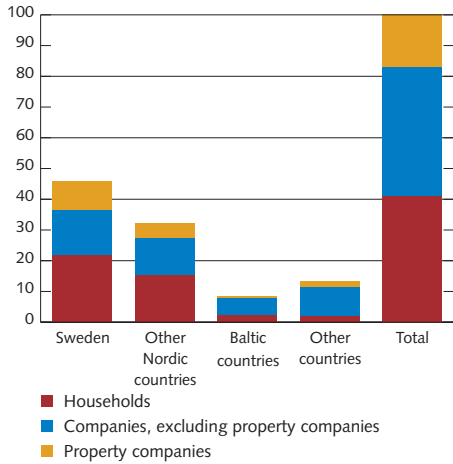
Sources: Bank reports and the Riksbank

Chart 3:2. The banks' earnings
SEK billion



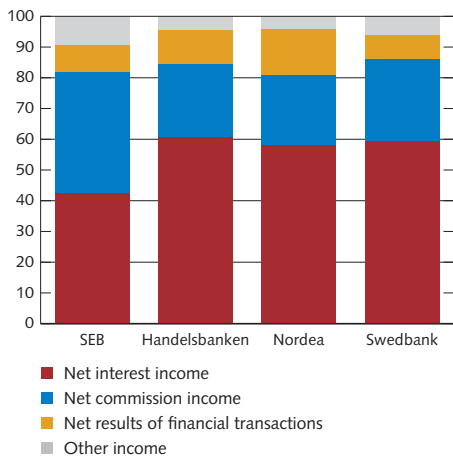
Sources: Bank reports and the Riksbank

Chart 3:3. Lending per geographical area and borrower category, year-end 2008
Per cent of total lending



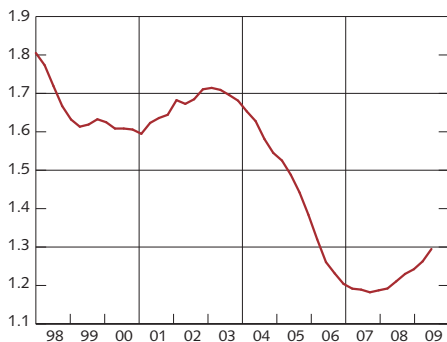
Sources: Bank reports and the Riksbank

Chart 3:4. Earnings distribution over the last three years
Per cent



Sources: Bank reports and the Riksbank

Chart 3:5. Net interest income in relation to interest-bearing assets
Per cent



Sources: Bank reports and the Riksbank

The banks are dependent to varying degrees on net interest income

(Chart 3:4). SEB has a lower share of net interest income than the other three banks and a larger share of net commission. The reason for this is that SEB is dependent on securities-related earnings to a greater degree than the other banks. Handelsbanken and Swedbank have a large proportion of net interest income as a result of their extensive mortgage lending.

Table 3:1. Lending in the major banks, geographical breakdown, March 2009.
Percentage share of total lending

	Handelsbanken	Nordea	SEB	Swedbank
Sweden	69	23	48	77
Norway	13	16	7	*
Denmark	4	29	2	*
Finland	7	19	3	*
Estonia	0	1	3	7
Latvia	0	1	3	5
Lithuania	*	1	5	5
Germany	1	0	24	*
UK	4	0	*	*
Other countries	1	10	5	7

Note. * indicates that there is no data or that the bank has low exposure in the country.
Sources: Bank reports and the Riksbank.

Net interest income increased substantially during the reporting period.⁹³

This is explained for one thing by the increase in the banks' deposit and lending volumes. This is partly due to the Swedish krona having weakened in relation to many other currencies. A weaker krona means that the banks' lending and deposits in foreign currency increase when measured in Swedish kronor. As approximately half of the banks' lending is in other currencies, the weakening of the krona has significant effects. For example, lending at Nordea, the bank that has the largest proportion of its operations outside Sweden, increased by eight per cent measured in euro but by 26 per cent measured in kronor.

Increased lending margins have also contributed to the increase in net interest income.⁹⁴

In Chart 3:5, it can be seen that the net interest margin, that is net interest income in relation to interest-bearing assets, increased during the reporting period. If the increase in net interest income had only been driven by increased volumes, the net interest margin would to a large extent have remained unchanged. Both the lending margin and the borrowing margin are important to the net interest margin. The banks have not cut their lending rates as much as their funding costs have declined recently, and their lending margin has therefore increased. One reason for this is that it is difficult for the banks that have not joined the government debt instruments'

93 The reporting period is the latest four-quarter period running to the end of the first quarter 2009. Unless otherwise stated, comparisons are made with the preceding four-quarter period. The figures are adjusted for one-off effects.

94 The lending margin refers to the difference between the banks' financing costs and their lending rates, and the deposit margin refers to the difference between what the banks receive for investing in the market and the interest rate that the banks pay for their deposits.

guarantee scheme to issue large volumes at longer maturities than six months. This means that the banks are forced to fund long-term loans with short-term funding and this increases the liquidity risk in the banks' operations (see the section on funding). The banks compensate for this increased risk through higher lending interest rates. 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.

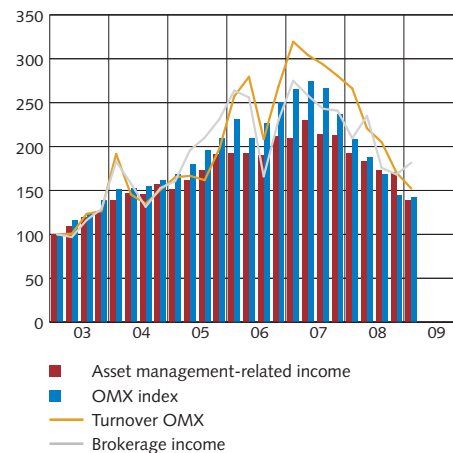
The banks' securities-related commission income has largely followed developments in the stock market. Consequently, this has declined since the first quarter of 2007 (see Chart 3:6) and had a negative effect on net commission income. Net commission income also consists of commissions from payments. This is, on the other hand, a more stable source of income that increased by five per cent during the reporting period.

The net result of financial transactions increased by over 50 per cent during the reporting period. The increase is mainly explained by the fact that the value of the banks' interest-bearing securities rose towards the end of the reporting period, which was primarily due to the falling interest rates. This was counteracted to some extent by a declining in the value of the banks' assets in shareholdings. The low interest rate is expected to contribute positively to the net result of the bank's financial transactions in the period ahead.

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. This is explained by the fact that the costs of the major banks' increased at a higher rate than earnings. The cost increases are largely due to increasing personnel costs, but also to write-offs of goodwill. The cost/income ratio thus increased somewhat during the reporting period (see Chart 3:7). However, the factor that has had the greatest impact on profits is the substantial increase in provisions for future loan losses at the end of the period (see the box "What are loan losses?"). As a result of this, profitability has continued to decline 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 11 per cent, which can be compared to the average of 15 per cent for the last 10 years.

In the period ahead, it is assumed that income and earnings of the banks will continue to increase, while profitability is expected to decline. 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 interest rate for loans at short maturities at a relatively high level and

Chart 3:6. 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

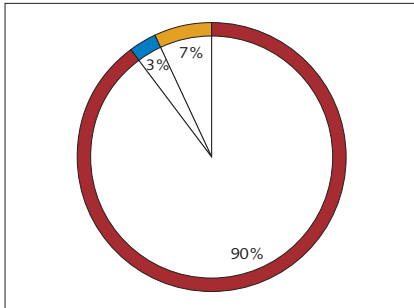
Chart 3:7. Cost-effectiveness at the major banks
Per cent



Note. Cost efficiency is measured as costs divided by income.

Sources: Bank reports and the Riksbank

Chart 3:8. Allocation of risk-weighted assets, March 2009
Per cent

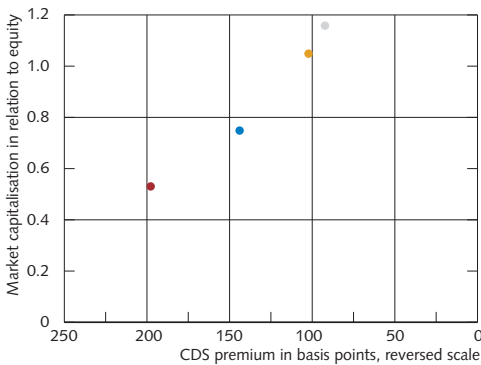


- Credit risk
- Market risk
- Operational risk

Note. According to Basel II. Operational risk is the risk for losses due to, for example, failed processes and human error.

Sources: Bank reports and the Riksbank

Chart 3:9. Share valuation and CDS premiums over the previous year



- Swedbank
- SEB
- Nordea
- Handelsbanken

Note. Average value for the period 26 May 2008 to 25 May 2009.

Sources: Bloomberg, Handelsbanken Capital Markets and the Riksbank

the lending margin will thus help to increase 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 likely that the banks will compensate for the lower deposit margins by increasing lending margins. In combination with a certain amount of growth in lending, this will probably lead to a continued increase in net interest income, but the rate of increase is expected to fall off. Another consequence of the low interest rates is that the present value of the banks' securities increases and thus contributes to increased unrealised mark-to-market income. It is assumed that future commission income from payment-related charges will therefore continue to increase. However, even if earnings increase, the profits of the banks will be lower than previously due to higher loan losses. The profitability of the banks will therefore decline.

Lending and credit risk

Approximately 60 per cent of the assets of the major banks consist of lending to the public. The credit risk is therefore the most substantial risk in banking operations, which is clearly evident in the composition of the banks' risk-weighted assets (see Chart 3:8). 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 risks.

The banks' assets are now associated with significant risks. During the initial phase of the financial crisis, the major Swedish banks coped relatively well as their exposures to the US mortgage market were limited. The broadening of the financial crisis and the economic downturn that is now affecting most countries and sectors has, however, led to a situation in which the exposures of the Swedish banks, above all in the Baltic countries, have become associated with a very high level of risk. This means that the banks themselves are associated with high risks and a high degree of uncertainty. This is confirmed, for example, by the fact that two of the four banks are on average valued at a level lower than their equity on the stock market and that the cost of insuring against the banks' default risks is high (see Chart 3:9).

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 presented in relation to the core Tier 1 capital that forms the core of the capital required to cover unexpected losses (see the box "Capital – regulatory capital in accordance with Basel II and economic capital). A high value thus entails a greater risk than a low value. In the table it can be seen that Swedbank has the relatively highest exposure to the Ukraine and the Baltic countries

and that SEB has the next highest. In the case of Handelsbanken it is primarily the exposures to the property sector that have high values, while for Nordea it is the exposures to the shipping sector and private equity companies that are conspicuous.

Table 3:2. The banks' credit exposures to high-risk areas in relation to their core Tier 1 capital, March 2009

Per cent

	Handelsbanken	Nordea	SEB	Swedbank
The Baltic countries	3	55	228	341
Ukraine	-	-	4	31
Commercial property	532	131	197	279
Construction industry	16	27	26	28
Shipping companies	24	98	48	47
Private equity	*	56	30	24

Note. * indicates that there is no data

Sources: Bank reports and the Riksbank.

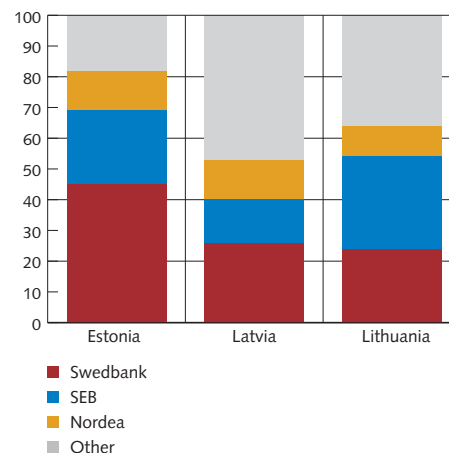
Although the growth in lending in the Baltic countries has declined during the reporting period, it is still relatively high. To a certain extent, the decline is explained by the fact that the banks have become more cautious in their lending. In addition, demand has fallen as a result of the weaker economic situation in these countries.

However, the Swedish banks are still the market leaders in all three countries (see Chart 3:10). The total lending of the major Swedish banks to the public in the Baltic countries amounted at the end of the first quarter 2009 to SEK 483 billion, which corresponds to seven per cent of the banks' total lending. Per country, the major banks' lending to the public was SEK 165 billion in Estonia, SEK 145 billion in Latvia and SEK 174 billion in Lithuania. In all three Baltic countries, GDP growth is expected to be negative this year and next year. Consequently, Nordea, SEB and Swedbank have increased their provisions for probable loan losses in all of the Baltic countries. The Swedish banks represented in the Ukraine are Swedbank and, to a lesser extent, SEB. Swedbank's lending to the Ukrainian public was 1.3 per cent of the Group's total lending to the public in the first quarter of 2009, or SEK 16.8 billion of a total of SEK 1 282 billion. SEB's lending in the Ukraine amounts to SEK 2.7 billion.

CREDIT RISK

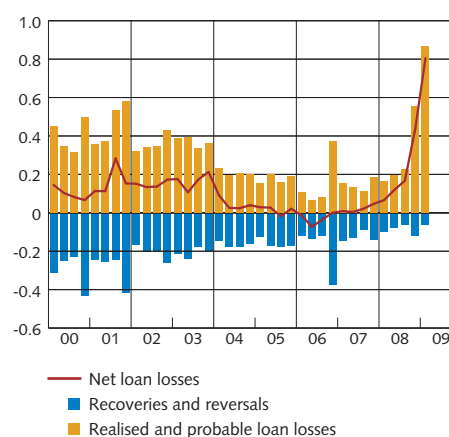
The major banks' loan losses as a percentage of their lending have increased dramatically. Loan losses increased to around SEK 26 billion during the reporting period and amounted to 0.4 per cent of lending). This can be compared to the figures of SEK 2 billion and 0.04 per cent for the previous reporting period. Loan losses increased above all towards the end of the period and, calculated on an annual basis, loans losses in the first quarter amounted to SEK 56 billion, which corresponds to 0.8 per cent of lending (see Chart 3:11). The increase in loan losses is mainly explained by increased provisions for probable loan losses – actual loan losses are limited as yet. At the same time, reversals and recoveries of earlier provisions have declined.

Chart 3:10. Market shares of lending in the Baltic countries, March 2009
Per cent



Sources: Bank reports and the Riksbank

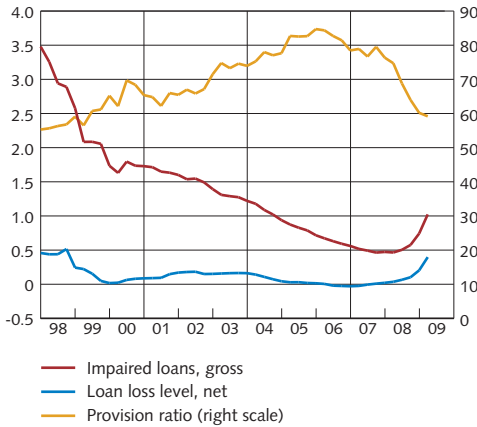
Chart 3:11. The major bank's loan losses
Percentage of lending



Note. Annualised data.

Sources: Bank reports and the Riksbank

Chart 3:12. The major banks' impaired loans, loan losses and provisions
Per cent



Note. Loan losses are calculated as for rolling four quarters, while the provision ratio is stated as a proportion of impaired loans, gross.

Sources: Bank reports and the Riksbank

Impaired loans increased more than loan losses (see Chart 3:12).

This is explained in part by the fact that the provision ratio, that is the percentage of provisions for probable loan losses in relation to impaired loans, fell. At the end of the reporting period the provision ratio amounted to 60 per cent, while it was 75 per cent at the end of the preceding reporting period. This indicates that the banks are to a certain extent using the provisions for probable loan losses that were set aside earlier, which leads to the loan losses not increasing as much as the impaired loans.

Loan losses from the banks' operations in the Baltic countries

amounted to almost SEK 10 billion during the reporting period. This corresponded to approximately 40 per cent of the major banks' total loan losses. The corresponding figure for SEB's and Swedbank's loan losses was over 60 per cent, while the figure for Nordea was seven per cent. Nordea's loan losses consisted to 40 per cent of losses in its Danish operations. Over half of Handelsbanken's loan losses came from the bank's Swedish operations. In addition, Swedbank reported loan losses of SEK 1 872 million for its operations in the Ukraine in the first quarter of 2009. This compares to SEK 7 million for the first quarter of 2008. Swedbank's loan losses in the Ukraine over the last four quarters total SEK 2 214 million.

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

In this Financial Stability Report, the Riksbank presents its assessment of the expected course of development for loan losses in the major Swedish banks in 2009 and 2010. This main scenario should be kept separate from the stress test that is presented later in the Report.

By breaking down the total loan portfolios of the major banks into the business sectors and geographical areas that the banks have exposures to, for example property companies in Sweden. The loan losses (LL) can be estimated for each exposure. These are then added together to arrive at the figure for total loan losses. This requires knowledge of the banks' exposures (E), the probability of default (PD) and the level of loss given default (LGD).⁹⁵ The loan losses (LL) for sector i and country j are calculated as follows:

$$LL_{ij} = E_{ij} * PD_{ij} * LGD_{ij}$$

Information on the loan portfolios is based on public data from the banks' annual reports for 2008. The credit volume for 2009 and 2010 has been set in accordance with the assessments of the

⁹⁵ For more information see the article "Using external information to measure credit risk" in Financial Stability Report 2006:1.

banks' borrowers made in Chapter 2. To estimate the probability of default for each geographical region and sector, the Riksbank uses an internally-developed model that is based on the Riksbank's and Consensus Forecast's assessments of how interest rates, inflation and GDP will develop for the respective countries (see Table 3:3).⁹⁶ In a second stage, the model-based forecasts are assessed by sector experts to ensure consistency between regions and sectors. As there are no publicly-available statistics on LGD, this information is mainly based on sector-specific recovery levels from the bond market. Adjustments are then made in line with these depending on the type of collateral that is assumed to lie behind the exposures. The better the collateral, the lower the level of LGD.

In the Riksbank's calculations for the four major banks it is assumed that the weighted average LGD is 13 per cent for mortgage lending to households.⁹⁷ For all other lending (to companies and other lending to households) LGD is assumed to be 43 per cent, while the weighted LGD for the entire portfolio (for both households and companies) is 34 per cent.

Table 3:3. Macroeconomic variables per country 2009 and 2010
Per cent

Country	GDP	CPI	3M interest	Effective PD
Sweden	-4.4 (1.0)	-0.3 (1.3)	0.6 (1.0)	2.3 (2.4)
Denmark	-3.0 (0.4)	1.2 (1.7)	2.8 (2.9)	1.5 (1.8)
Norway	-1.0 (1.5)	1.5 (1.6)	2.5 (2.1)	3.0 (3.4)
Finland	-3.7 (0.1)	1.0 (1.4)	1.7 (1.8)	1.0 (1.0)
Germany	-5.0 (0.4)	0.3 (0.9)	1.2 (1.3)	1.3 (1.6)
UK	-3.8 (-0.3)	1.6 (1.7)	1.4 (1.5)	3.5 (3.3)
Estonia	-15.0 (-3.5)	-1.0 (-3.5)	-7.5 (6.2)	11.1 (10.1)
Latvia	-20.0 (-5.6)	1.1 (-5.0)	13.1 (11.8)	13.7 (11.4)
Lithuania	-15.0 (-3.7)	2.9 (-2.0)	7.4 (6.1)	8.8 (10.1)

Note. The three-month interest rate for domestic currencies in the Baltic countries is less significant as most of the loans are taken in euros. The figures in brackets relate to 2010. The banks' loan losses are calculated as the sum of the realised loan losses and probable loan losses with deductions for reversed provisions and recoveries. Sources: Consensus Forecast and the Riksbank

It is important to emphasise that there is a high level of uncertainty in the calculations of 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 LGD will not always correspond to the loan losses 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 and the Ukraine. This is mainly due to the exceptionally weak macroeconomic development

⁹⁶ The model used for assessing the probability of default was presented in Financial Stability Report 2007:1.

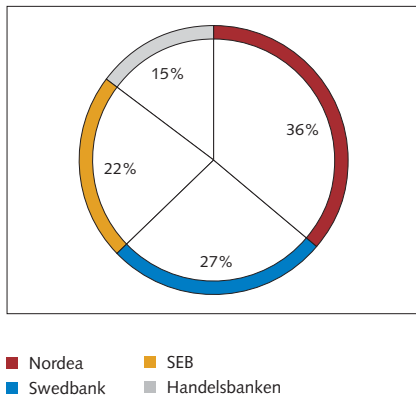
⁹⁷ The majority of the exposures for mortgage lending (primarily for the Nordic countries and Germany) have lower levels of LGD than 13 per cent, but as LGD is expected to be higher in the Baltic countries and the Ukraine the average level of LGD in the portfolio increases.

Chart 3:13. Earnings before loan losses and loan losses (net) in the major banks
Summed up over four quarters, SEK billion, fixed prices, 31 March 2009



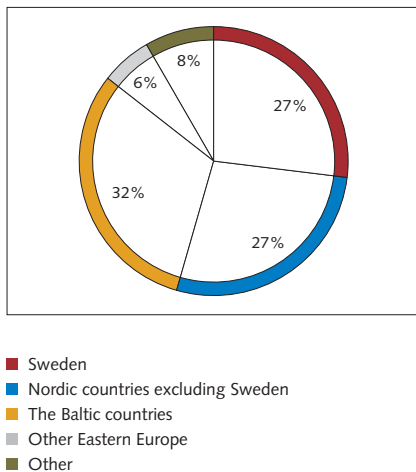
Note. Estimates for earnings before loan losses according to SME Direkt, May 2009.
Sources: Bank reports, SME Direkt and the Riksbank

Chart 3:14. Distribution of loan losses in 2009 and 2010 in the Riksbank's main scenario
Per cent



Sources: Bank reports and the Riksbank

Chart 3:15. Distribution of loan losses per region in 2009 and 2010 in the Riksbank's main scenario
Per cent



Sources: Bank reports and the Riksbank

that is expected in these countries (see Table 3:3). In addition, a large part of the growth in the banks' loan volume, mainly in the Baltic countries, coincided with a level of economic growth well in excess of the level it would be possible to sustain in the long term. In such circumstances, credit assessments are in practice often overly optimistic. There is therefore a risk that loans will be granted to fund projects and undertakings that are not profitable over a normal business cycle. This is also an indication that the banks will suffer relatively high loans losses in these countries.

On the developed markets on which the Swedish banks are active, the number of corporate bankruptcies is expected to increase on a broad front. Cyclically-sensitive sectors such as transport and construction are expected to be even more exposed (see Chapter 2). This applies in particular to the shipping sector where major loan losses may arise as a result of the dramatic decline in world trade. The losses relating 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 commercial property companies. This applies not least to the UK where the sector has been hit particularly hard by the decline in activity on the financial markets. 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 partly because a Nordic household will incur legal issues if it defaults on its mortgage payments.⁹⁸

According to the Riksbank's calculations, the four major banks in the main scenario are together expected to make loan losses of SEK 170 billion in 2009 and 2010.⁹⁹ The loans losses are expected to be SEK 70 billion in 2009 and SEK 100 billion in 2010 (see Chart 3.13). Loan losses in 2008 amounted to SEK 12.5 billion. This means that the loan losses in the main scenario are assumed to increase by almost six and eight times in 2009 and 2010 respectively compared to 2008. This is somewhat more than expected by the market participants, but within the range between the highest and lowest assessments among equity analysts.¹⁰⁰ Loan losses are expected to increase for all banks compared to 2008 (see Chart 3:14). Slightly less than 40 per cent of the loan losses stem from the banks' operations in the Baltic countries and the rest of Eastern Europe and roughly 50 per cent from operations in Sweden and other Nordic countries (see Chart 3:15). This also means that the aggregated result for the major banks will

98 In the Nordic region, in contrast to the USA, it is not possible for a household to stop making mortgage payments in exchange for the bank being given the keys to the house, see "Why are many households leaving their homes in the United States?", Financial Stability Report 2008:1.

99 The loan losses in 2009 and 2010 are equivalent to approximately 5.5 per cent of Sweden's GDP in the same period. The corresponding figure during the bank crisis of 1991-1993 was 10 per cent of GDP.

100 See SME Direkt, May 2009.

only be marginally positive during the two years as the loan losses are almost as large as the expected profits before loan losses.

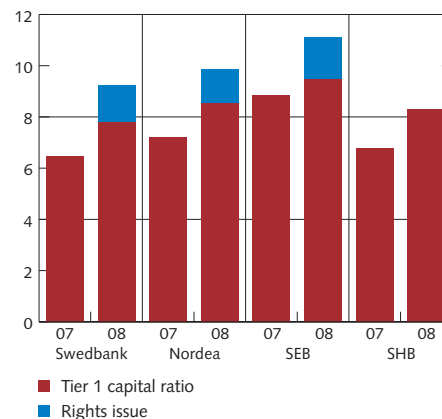
CAPITAL

Three of the major Swedish banks have carried out rights issues during the last six months (see the box Capital – regulatory capital in accordance with Basel II and economic capital). Nordea was third in line of the major Swedish banks to ask the shareholders for more capital. Nordea's rights issue added over SEK 27 billion (EUR 2.5 billion) to the bank's equity. SEB's rights issue of SEK 15 billion was completed in March, and Swedbank completed its rights issue of over SEK 12 billion in January. At the same time, dividends to the banks' shareholders for 2008 have been reduced or cut altogether. Compared to 2007, all four banks have strengthened their Tier 1 capital ratios (see Chart 3:16).

In an international perspective the Swedish banks are well-capitalised at present. Chart 3:17 presents a comparison of the core Tier 1 capital ratios of European banks, that is the Tier 1 capital excluding Tier 1 capital supplements, in relation to risk-weighted assets in accordance with Basel II. The Chart reveals that the core Tier 1 capital ratios of the Swedish banks are among the highest and well exceed the statutory level for Tier 1 capital ratios. This is the case even if account is taken of the loan losses in the Riksbank's main scenario for 2009 and 2010. The Swedish banks thus have sufficient capital to cope with the loan losses that the Riksbank expects in the main scenario.

When the Swedish krona weakens, equity is not significantly affected in absolute terms. The Swedish banks have more assets than liabilities in Swedish kronor in their balance sheets. This is because the

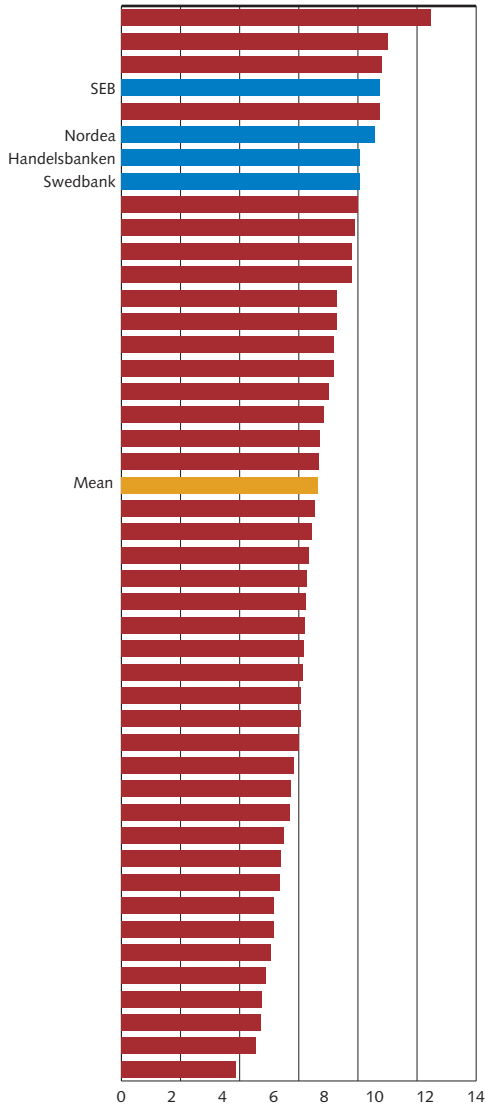
Chart 3:16. Tier 1 capital ratios including rights issues, first quarter
Per cent



Note. In accordance with transitional rules.

Sources: Bank reports and the Riksbank

Chart 3:17. The core Tier 1 capital ratios of European banks, first quarter 2009
Per cent



Note. Estimated and observed core Tier 1 capital ratios in accordance with Basel II. Including pending and announced capital raises.

Source: Nomura

banks' lending is to a great extent to the Swedish general public and thus in Swedish kronor, while a large part of the funding is in foreign currency and then mainly in dollars and euro. However, funding in foreign currencies must be translated into kronor to cover the Swedish general public's loan requirement in kronor. The banks use FX swaps to match their assets and liabilities in all currencies.¹⁰¹ As a result, the banks' currency risk is relatively small, and their equity is not significantly affected in absolute figures by a weakening of the krona.

On the other hand, the banks' equity in relation to their risk-weighted assets declines when the krona weakens. When the krona weakens, the banks' assets, including their risk-weighted assets, increase converted to Swedish kronor. This means that even if equity is hedged against changes in exchange rates, and thus remains unchanged in size, the ratio between equity and risk-weighted assets decreases in the event of a weakening of the krona. In an attempt to counteract this, a large proportion of the banks' Tier 1 capital supplements, that is that part of Tier 1 capital that is not equity, consists of loans in dollars and euros. The banks' Tier 1 capital supplements thus have a dampening effect on the deterioration of the banks' Tier 1 capital ratios when the krona weakens (see the box Capital – regulatory capital in accordance with Basel II and economic capital).

101 A swap is an agreement between two parties to exchange a particular currency for another during a predetermined period of time and in accordance with certain terms.

What are loan losses?

Over the last six months, the focus concerning risks in the banking sector has shifted from market risks and liquidity risks to credit risks. As over half of the assets of the Swedish banks consist of lending, the risk of future loan losses is the largest single risk. The central elements of the term loan losses are reviewed below.

When we refer to the banks' loan losses we are referring to the item on the banks' income statement that in accounting language is termed loan loss, net. This item can be divided into four parts:

- provisions for probable loan losses
- realised loan losses
- reversals
- recoveries

Provisions and loans

A good place to start when trying to understand the concepts is the bank's balance sheet and what in some cases results in loan losses, that is the bank's lending. Initially the bank records lending on the balance sheet as the sum that has been lent. Loans are then accounted currently as the sum lent with any deductions for provisions for probable loan losses and write-offs for realised loan losses. On the closing day, the bank assesses whether there are objective grounds for writing down the loans. In order to determine the write-down for loan losses, both

individual and group valuations of the loans are used. An individual provision is made for the probable loan loss from a loan that is identified as impaired. To identify the write-down requirement that cannot yet be allocated to individual loans, a group valuation is then made of the loans that are not classified as impaired in the individual assessment.

Impaired loans

Every claim that gives rise to provisions is included at its full amount in gross impaired loans even if parts of the claim are covered by collateral. Gross impaired loans with deductions for provisions for probable losses constitute net impaired loans. A loan is not impaired, however, if there is collateral that by a comfortable margin covers both the principal, unpaid interest and any charges for late payment.

Non-performing loans

Non-performing loans is a term that often comes up in connection with impaired loans. Non-performing loans are loans for which interest, amortisations or overdrafts fell due for payment more than 60 days ago. An impaired loan is thus a non-performing loan if it fell due more than 60 days ago and lacks sufficient collateral to cover the total loan. Table B3 summarises how provisions, impaired loans and non-performing loans are interlinked.

Table B3. Lending and impaired loans in the balance sheet

A. Loans that are not impaired	20,000
B. Non-performing loans that are deemed to be impaired	200
C. Loans that are deemed to be impaired for other reasons	150
D. Gross impaired loans (B+C)	350
E. Loans before provisions (A+D)	20,350
F. Provisions for individually-valued loans	100
G. Group provisions	50
H. Total provisions (F+G)	150
I. Value of loans recorded on balance sheet (E-H)	20,200

Source: The Riksbank

Provisions for probable losses and realised losses

Together, the individual and group provisions made during the reporting period add up to the part of net loan losses that is referred to as provisions for probable loan losses. The other part of net loan losses consists of the realised loan losses during the reporting period. As in the case of provisions for probable loan losses, realised loan losses may relate to all of or part of a loan and be reported when there is no realistic chance of recovery. This is, for example, the case when a composition proposal has been accepted or when a loan has been remitted in some other way.

Recoveries and reversals

The two other elements of net loan losses are the recoveries and reversals made during the reporting period. Recoveries consist of sums recovered from the realised loan losses of previous years. Reversals relate to the reversal of previous write-downs for probable loan losses that are no longer relevant. The total for provisions and realised loans losses with deductions for recoveries and reversals constitutes net loan losses. Table B4 shows how the various components are interlinked.

Table B4. Net loan losses in the income statement

A. Realised loan losses	65
B. Provisions for probable loan losses	60
C. Recovery of previous realised loan losses	25
D. Reversal of provisions that are no longer required for probable loan losses	20
E. Net loan losses (A+B-C-D)	80

Source: The Riksbank

Capital – regulatory capital in accordance with Basel II and economic capital

To protect depositors and to safeguard financial stability there are regulations governing the capital adequacy of the banks, that is how much capital a bank must hold in relation to its risk-weighted assets. The aim of these regulations is to ensure that the bank will be able to cope with potential losses. In early 2007, the new capital adequacy requirements in the Basel II framework began to apply to the Swedish banks. In Basel II, the calculation of the banks' capital adequacy requirements is more risk-sensitive than previously and thus better reflects the banks' true risks. Two measures that are often used in connection with Basel II are the regulatory capital requirement, that is the statutory capital requirement, and economic capital, which is the capital the bank needs to run its operations and cope with unexpected losses. The two terms are presented in general below

Basel II – regulatory capital requirement

The regulatory capital requirement in Basel II requires the banks to have a level of Tier 1 capital of at least four percent, and a capital base of at least eight per cent of risk-weighted assets. During the crisis it has become very clear that the market has demanded higher capital ratios than these statutory minimum levels. The focus on Tier 1 capital, and even on core Tier 1 capital which is the purest measure of capital strength, has also steadily increased.

Risk-weighted assets

Lending to the non-bank public makes up as much as 60 per cent of the major Swedish banks' assets. This lending entails credit risk, that is the risk that the borrowers will not be able to repay their loans. In order to cover these credit risks, (but also other risks such as market risks and operational risks) the banks must have a buffer in the form of capital. How much capital a bank needs depends on the bank's risk-weighted assets. Risk-weighted assets are calculated by

allocating each exposure (for example a loan to a company) a risk-weight based on the borrower's creditworthiness and underlying collateral. This means that the banks do not need to retain as much capital for a borrower with a high credit rating as for a borrower with a low credit rating. One of the fundamental aims of Basel II is to ensure that the regulatory capital requirement reflects the risk that the banks actually have on their balance sheets. In the capital adequacy requirements stipulated in Basel I, the risk-weights for lending to companies was the same irrespective of a company's creditworthiness, that is the requirements were based on general standards. This meant that the banks did not need to retain more capital in order to lend to a high-risk company, where the margins and thus the earnings are usually better, compared to lending to a low-risk company. This encouraged the banks to sell loans with a low level of risk (for example by means of securitisation) and to keep loans with a high level of risk which, all else being equal, increased the risk on the bank's balance sheets.

In Basel II, the banks can use a standardized approach (which is more refined than in Basel I) or their own models and methods for calculating risk-weights. As the banks have detailed historical information on their exposures, this means that the risk-weights better correspond to the actual risks in the operations concerned. In the case of the Swedish banks, risk-weighted assets were higher under Basel I than under Basel II. This is mainly because the Swedish banks have a relatively large proportion of lending to households that have housing as collateral. These exposures were allocated higher risk-weights under Basel I than in the banks' own models. Historically, mortgage lending to households has been associated with very low loan losses. Lower risk-weighted assets thus mean that the banks do not need to hold as much capital as under Basel I. Up to 2010, however, transitional regulations apply under which the banks may only gradually reap the benefits of the reduced capital requirements.

The capital base

The capital strength of the banks is dependent on their funding structure. According to the Basel regulations, common stock is the strongest form of capital. However, this type of funding is also the most expensive (see Figure B1). This is because the shareholders are at the bottom of the priority list and, in the event of a bankruptcy, will only get the possible residual value that remains when all the other more prioritised creditors have been paid. To compensate for this risk, the shareholders have the highest demands regarding the rate of return and thus represent the most expensive form of funding. The weakest form of capital is so-called subordinated debt. This is a less expensive form of funding than common stock. A bank's capital base can be divided into Tier 1 capital and Tier 2 capital.

Tier 1 capital

In somewhat simplified terms, Tier 1 capital can be divided into two parts: Core Tier 1 capital and supplementary Tier 1 capital. Core Tier 1 capital largely consists of equity reduced for goodwill and adjusted for untaxed reserves. Thereby it consists for the most part of the bank's own equity, that is the value that belongs to the bank's shareholders. The return to the shareholders normally consists of dividends and any increase in the value of the company. If, on the other hand, the value of the company falls, for example if the loan losses are so large that

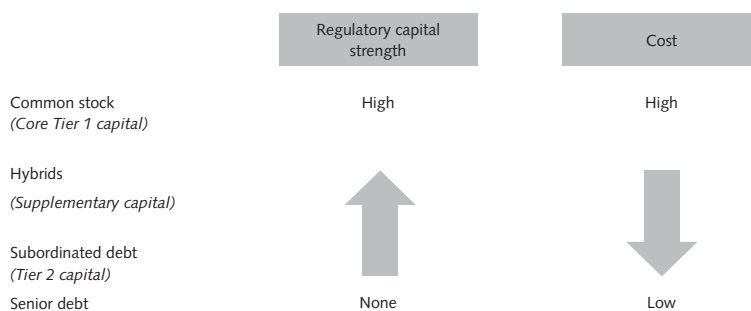
the company makes a loss, equity will also fall. As shareholders are never entitled to demand a dividend or to have their capital contribution refunded, the core Tier 1 capital completely absorbs the first losses. This is therefore the strongest form of capital.

Supplementary Tier 1 capital, or so-called hybrid capital, is a cross between equity and debt. The return on hybrid capital is determined by interest payments just as in the case of a normal bond. The inclusion of hybrid capital in Tier 1 capital requires that the hybrid capital can also absorb losses. If a lender is always entitled to get back the loaned capital then the loan is not loss absorbing. If the bank on the other hand, in the event of financial problems, can suspend interest payments, write down the value of the bond or convert it to common stock without the risk that the lender will make the bank bankrupt, then the capital can be classed as loss absorbing.

Tier 2 capital

Tier 2 capital mainly comprises subordinated loans. A subordinated loan is subordinated to other debt, which means that the investors are not paid until the holders of senior-ranked debts have been paid. In contrast to hybrid capital, a bank cannot in general suspend interest payments or write down the value of the loan without the risk that the investors will start legal proceedings. Tier 2 capital cannot therefore absorb losses in the same way as hybrid capital.

Figure B1. The banks' funding structure



Source: The Riksbank

Economic capital – the banks' own capital requirements

Apart from the regulatory capital requirements set by Basel II, the banks have their own internal capital requirements. This so-called economic capital, or risk capital, is the capital that the banks themselves believe they need to run their operations with all the various risks this entails and to cope with any unexpected losses that may arise. The expected losses should be met by current earnings, which are in part based on the risk premiums the banks charge to the borrowers. In simple terms, the Swedish banks retain capital on a level with what is required to achieve a certain credit rating. In order to obtain an AA rating (the second highest credit rating) economic capital is calculated on the basis of a confidence level of 99.97 per cent (see Figure B2). This means that the banks should retain enough capital so that the risk of default is no greater than 0.03 per cent looking one year ahead.

Regulatory capital in Basel II compared to economic capital

Since the early 2000s, several of the Swedish banks have used their own models to calculate economic capital. However, as the regulatory capital requirement in Basel I was at that time calculated on the basis of general standards the measures differed. While the banks' models attempted to reflect the actual risk at the bank in a more sophisticated way, regulatory capital was a rougher measure. As the risk-weights that the banks use in their models for economic capital can now be used to calculate the regulatory capital requirement, the differences between these measures will decrease. This is also one of the main aims of Basel II.

However, regulatory capital and economic capital will never match completely (see Chart B12). The regulatory capital requirement is governed by the interests of the authorities with regard to protecting depositors and safeguarding financial stability. Economic capital is governed instead by the interests of the shareholders,

Figure B2. Loss distribution for a loan portfolio

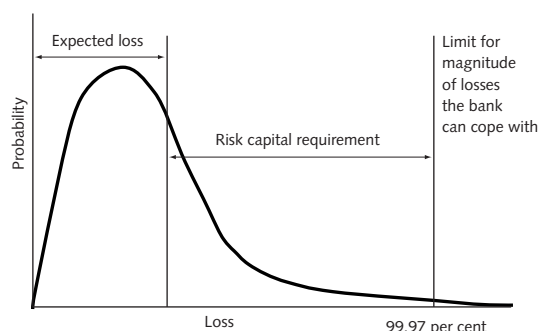
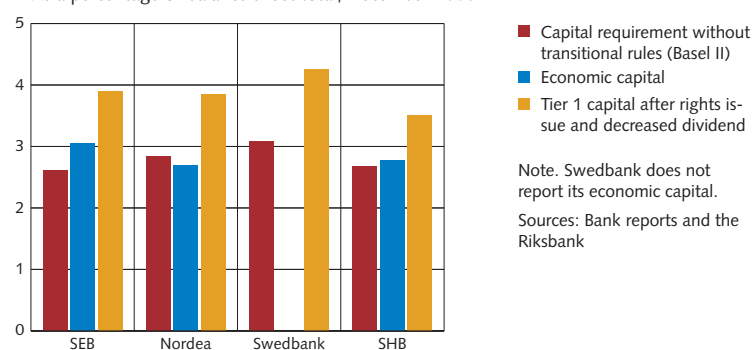


Chart B12. Regulatory capital requirement, economic capital and Tier 1 capital
As a percentage of balance sheet total, December 2008



■ Capital requirement without transitional rules (Basel II)
■ Economic capital
■ Tier 1 capital after rights issue and decreased dividend

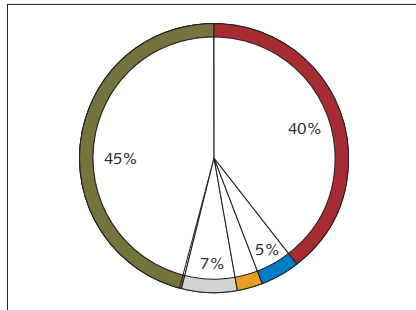
Note. Swedbank does not report its economic capital.

Sources: Bank reports and the Riksbank

whose aim is to optimise the bank's capital structure in order to maximise the value to the shareholders. In simple terms, the amount of economic capital is determined as an equilibrium where the marginal cost of funding the bank with more equity is equal to the advantage of being able to withstand further negative events thanks to the extra capital. If a bank should choose to retain capital to withstand all possible negative events it would need to hold so much capital that the costs would be too high.

In the case of the Swedish banks, the economic capital is roughly in line with the regulatory capital requirement (see Chart B 12). However, the capital that the banks in fact retain (Tier 1 capital) is higher than the economic capital and regulatory capital requirement which means that the banks have a buffer against unexpected events. One of the reasons for this is that the banks strive to achieve an attractive credit rating, which reduces their funding costs.

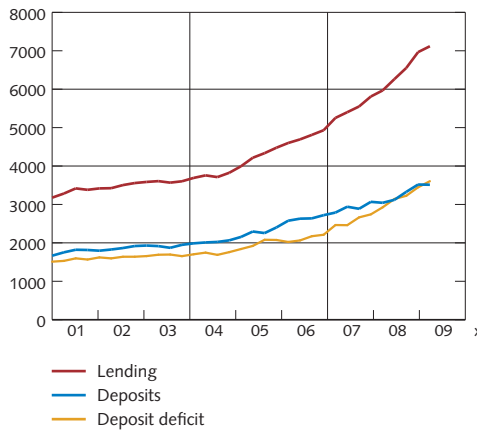
Chart 3:18. The banks' sources of funding, March 2009, March 2009
Per cent



- Debt securities issued
- Credit from the Riksbank
- Government-guaranteed borrowing via the Swedish National Debt Office 3%
- Interbank, net
- Deposits

Sources: Bank reports and the Riksbank

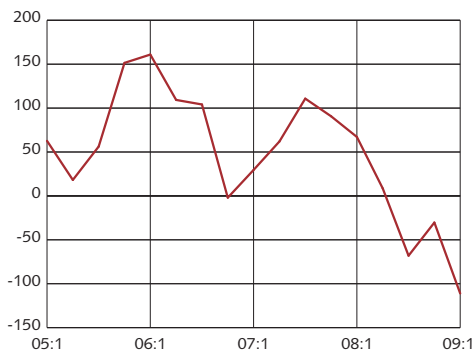
Chart 3:19. The banks' deposits and lending
SEK billion



Note. Deposit deficit = lending – deposits.

Sources: Bank reports and the Riksbank

Chart 3:20. Annual change in the banks' lending to other credit institutions
SEK billion



Sources: Bank reports and the Riksbank

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 their operations, is to be regarded as liquid. The banks' assets in the form of lending are, on the other hand, illiquid. The banks thus have a liquidity risk to manage. The reason for this is the uncertainty regarding both the supply and price of funding in the future in combination with the difficulty of quickly selling assets.

Half of the banks' funding consists of market funding and half of deposits from the public (see Chart 3:18). In total, the banks' funding amounts to around SEK 7,700 billion. Market funding consists primarily of issued securities where bonds account for the long-term market borrowing and certificates for the short-term borrowing. Borrowing on the interbank market, which is primarily used to balance liquidity, is also a part of the short-term market borrowing. In addition, loans from the Riksbank and other central banks, together with borrowing backed by government guarantees, have replaced parts of the banks' normal funding.

The financial crisis has made it more difficult for banks to fund their operations on the market. The fact that they are highly dependent on the market is thus a problem for the Swedish banks that are not part of the government's guarantee programme. Although deposits from the public are increasing, lending is increasing even more. The difference between deposits and lending, the so-called deposit deficit, is thus increasing (see Chart 3:19). 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 first quarter 2009, the deposit deficit amounted to SEK 3 600 billion. Although there are signs that competition for deposits has increased between the banks, resulting in higher deposit rates, deposits from the public are still the least expensive source of funding. As a result of the greater dependence on market funding, the banks' average funding costs are increasing.

The fact that it has become increasingly difficult to find market funding has meant that the banks' borrowing has become more short-term than previously. It is above all borrowing at longer maturities that has become more difficult. This means that the difference between when assets and liabilities mature has increased further. In normal circumstances, this would lead to an increase in the liquidity risk. However, thanks to the extraordinary measures taken by the central banks and the possibility to borrow with a government guarantee, these liquidity risks have been dealt with to a certain extent. In Chart 3:20 it can be seen that the major banks' lending

to other institutions has fallen by approximately SEK 111 billion compared to the same period in the preceding year, which indicates that the Riksbank and other central banks have acted in place of the interbank market.

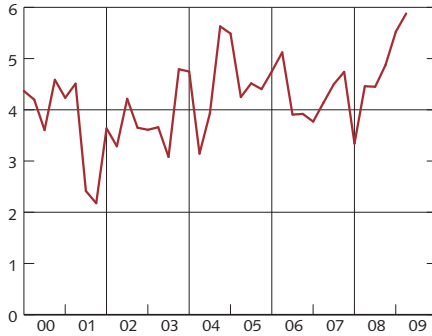
A substantial share of the banks' market borrowing takes place in foreign currency. Under normal circumstances this is positive as it reduces dependence on an individual market. However, during the financial crisis it has become apparent that it is the foreign market funding that the Swedish banks have found it most difficult to renew. It has proved to be very difficult, and in some cases impossible, for banks to issue debt abroad. This means that it has not been possible to renew a large part of the banks' bonds and certificates once they have fallen due for payment. The Riksbank has replaced part of the foreign currency borrowing that is no longer available and to date the Riksbank has lent USD 30 billion to the Swedish banking system. However, the fact that over SEK 1 000 billion of the major banks' market funding in foreign currency will fall due within the next 12 months entails a risk. If access to market funding continues to be problematic, further measures will be required on the part of the authorities.

Contagion risks

Contagion risk relates to the risk that problems in one institution will spread to other institutions. Such risks can be direct or indirect. Direct contagion risk relates to the risk that the actual claims that banks have on other banks or on companies, so-called counterparty exposures, will lead to major losses and, in the worst case, failures of other banks if one bank defaults on its payments. The banks can influence the direct contagion risks themselves by setting limits for the level of exposure they accept in relation to particular institutions, or by requesting collateral for their loans.

Indirect contagion risk, on the other hand, is difficult for the banks to influence as it relates to the risk that information that a bank is experiencing problems will lead to fears arising on the market that other banks have similar problems. Such fears, whether they are well founded or not, can lead to confidence problems for banks other than the one originally involved. This could in turn lead to funding or liquidity problems. It may for example lead investors to pull out from the market, to actors on the financial markets becoming unwilling to trade with each other or to the public withdrawing their money from their bank accounts. Such fears can arise because banks have similar business operations and therefore are exposed to the same risks. This in turn means that they may be sensitive to the same macroeconomic events. Such fears may also arise because the market participants believe that banks are directly exposed to the bank that face the risk of collapse.

Chart 3:21. The major bank with the lowest Tier 1 capital ratio after another bank defaulted on its 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

Both indirect and direct contagion risks can result in a situation in which several banks experience difficulties at the same time, which may have a negative impact on the functioning of the entire financial system.

The Riksbank's tests show that the direct risk of contagion between the Swedish banks has decreased since the previous report. The tests are based on data on the largest counterparty exposures of the four major banks that the Riksbank has compiled in every quarter since 1999.¹⁰² On the basis of this data, the Riksbank calculates the effects of the collapse of one of the major banks on the Tier 1 capital of the other three major banks. In the tests, it is assumed that 75 per cent of the banks' exposures to the bank that collapses will be lost and that it will be possible to recover 25 per cent.¹⁰³ During the previous three quarters, none of the banks had exposures to another bank to the extent that their Tier 1 capital fell below the statutory requirement of at least four per cent in the Riksbank's test (see Chart 3:21).¹⁰⁴ It is, however, important to bear in mind that the Riksbank's counterparty data only provides a picture of the situation at one point in time and is therefore not necessarily representative of the entire period. Seen over time, the data nevertheless indicates how the contagion risks have developed in the Swedish banking system.

The decrease in the direct contagion risk during the period is partly due to the increase of the banks' Tier 1 capital and partly to the fact that the banks are depositing money with each other to a lesser extent than previously. During the last three quarters, the total counterparty exposures of the major banks have declined. This is mainly due to a decline in unsecured loans. The decline in the banks' counterparty exposures resulting from unsecured loans can partly be explained by the fact that the banks no longer deposit money with each other on the overnight market, but instead deposit their daily surpluses with the Riksbank.

The Riksbank's tests also show that the major banks' exposures to large companies and foreign banks do not constitute a serious direct contagion risk. The major banks also have significant exposures to foreign banks and large companies which could result in significant losses. However, in the Riksbank's tests, payment defaults on the part of a large company or foreign bank did not result in the Tier 1 capital ratio at any of the major banks falling below four per cent in the previous three quarters. As in the tests relating to the banks'

¹⁰² For a detailed description of the Riksbank's counterparty data, see the box "The Riksbank's counterparty data" in FSR 2008:2.

¹⁰³ The Riksbank's test corresponds to a situation in which a bank, without warning, suspends all its payments with immediate effect. Possible recovery is also assumed to be relatively limited. The Tier 1 capital levels calculated in the tests should therefore be seen as the outcomes of an extreme stress test.

¹⁰⁴ If the loss also causes another bank to default on its payments, this may lead to further contagion. The risk of such second-wave effects increases if the banks have originally been affected by a similar shock.

exposures to each other, it is assumed in this test that 75 per cent of the exposure is lost and that 25 per cent can be recovered.

Given the high level of uncertainty and the low level of confidence that characterise the financial markets, the indirect contagion risk is assessed to be high. However, indirect contagion risk cannot be measured directly as it depends on the confidence between the participants on the financial markets. The Riksbank nevertheless attempts to assess the indirect contagion risk in the Swedish banking system on the basis of the situation on the financial markets in general and for individual institutions. The lack of confidence, that arose when Lehman Brothers filed for bankruptcy protection last autumn, developed into general uncertainty concerning the ability of the financial institutions to meet their commitments (see Chapter 1). Uncertainty on the market affects not just individual institutions but all of the market participants in that investors become less willing to contribute funding. The extensive stability measures, including the government guarantees for bank debts, are helping to reduce uncertainty on the market. As described in the first chapter of the report, however, there is still a considerable lack of confidence in the market and the financial system is still sensitive to individual negative events. If a Swedish bank were to experience problems and, as in the test above, default on its payments, there is therefore a risk that this would have serious consequences for the other Swedish banks as well, even though the actual counterparty exposures are not larger than that the banks could cope with losing them. All-in-all, this indicates a high level of indirect contagion risk, although this is somewhat mitigated by the government guarantees.

Stress test of the banks resilience

The Riksbank conducts ongoing stress tests to assess how relatively unlikely events may affect the resilience of the banks. For example, for several years now the Riksbank has stress tested the resilience of the banks to a turn in the credit cycle and a dramatic downturn in the Baltic countries. In the previous Stability Report, the banks' resilience to a global recession scenario was also tested.

At present, there is a great deal of uncertainty concerning the development of the economy in the period ahead and its effects on the banks. In this report, the Riksbank has therefore tested the banks' resilience to a scenario that is much more severe than the Riksbank's main scenario. The financial crisis has also increased the focus on the capital strength of the banks. The test therefore also covers how loan losses may affect the banks' Tier 1 capital ratios.

The scenario runs over two years and the level of stress is high. Given that the initial position of the global economy in 2009 and 2010 is already unprecedentedly weak, such a stress test can be justified on two counts. First, there is a great deal of uncertainty

regarding the development of the global economy in the period ahead. Most analysts predict that the decline in the global economy will slow down towards the end of 2009 and that a recovery will begin thereafter. Previous experience shows, however, that economic downturns in combination with financial crises can be both deeper and more prolonged than originally forecasted. Second, there is a great deal of uncertainty regarding how substantial changes in macroeconomic variables, for example GDP and interest rates, affect the parameters that ultimately determine the banks' loan losses, that is the probability of default (PD) and the level of loss given default (LGD). It cannot be ruled out, therefore, that in its main scenario for the development of loan losses the Riksbank underestimates the effects of both PD and LGD. Given this background, it is assumed in the stress test that the macroeconomic outcome will be much poorer and the impact on the quality of credit greater than the Riksbank assumes in its main scenario.

The result of the stress test is based on public data from the banks' annual reports and thus provides only an approximate picture of the actual lending portfolio. A few simplifying assumptions are also made concerning the increase in risk-weighted assets and profits before loan losses. The stress test is also static in the sense that it is assumed that the banks take no action to improve their situation during the two years. In reality, it is more probable that the banks will act to defend their Tier 1 capital ratio by attempting to reduce their balance sheets in order to free up capital or by raising new capital at an early stage.

An important question in this context is how the downturn will affect the size of the banks' risk-weighted assets. Swedish banks generally use a method called *through-the-cycle* when they assess the probability of default (PD) that is used to calculate the risk-weights of the assets. In this method, the probability of default should correspond to an average year during an economic cycle. In good times, the banks' estimated PD will therefore be higher than the actual outcome. This means that the banks have to a certain extent made allowances for less favourable times. When loans migrate to poorer risk classes (with higher PD) the banks can thus benefit from the buffers they have built up and the capital requirement could then remain relatively unchanged. It is Finansinspektionen (FI) that has approved the models the banks use to calculate their risk-weighted assets. On the basis of the information that Finansinspektionen has regarding the banks' models, and of developments during the fourth quarter of 2008 and the first quarter of 2009 when economic activity has deteriorated significantly, Finansinspektionen's assessment is that the migrations will thus only have a limited effect on the banks' risk-weighted assets.¹⁰⁵ In the stress test, however, the Riksbank assumes that the banks' risk-weighted assets increase by five per cent per

¹⁰⁵ See Finansinspektionen (2009), "The effects of the government stability measures—third report," March.

year as the degrees of stress in the test is high. It is assumed that the increase is the same for all banks. In reality, however, the effect of migration in risk-weighted assets will differ from bank to bank as they use different calculation measures. Risk-weighted assets for the banks that use the *through-the-cycle* method to a large extent will, all else being equal, increase less than for those banks that use the method to a lesser extent.

In the scenario, it is assumed that the following three events occur at the same time:

- First it is assumed that Swedish borrowers are affected negatively by increasing unemployment, declining global demand and falling GDP. This is assumed to affect large parts of the corporate sector, which increases the number of defaults in both the industrial and property sectors. This in turn leads to a substantial increase in the level of loan losses for lending to Swedish companies (see chart 3:4). For losses of this magnitude to arise, it is deemed that GDP in Sweden would need to fall about twice as much as in the Riksbank's forecast for 2009–2010¹⁰⁶, which means that it would need to be much weaker than expected for the stress test scenario to actually occur. In addition, the stress scenario implies a higher long-term interest rate than seems probable during the next two years. It is also assumed that loan loss levels for lending to households that does not have housing as collateral (so-called consumption loans) will increase. The loan loss level for mortgage lending is assumed to be relatively low as the probability of default is deemed to be low at the same time as the loans have housing as collateral.
- The Baltic countries and the Ukraine are assumed to be the regions that are hit hardest. Falling asset prices (mainly for commercial properties) and a general increase in bankruptcies contribute to very high levels of loan losses in the scenario for properties, companies and households.
- Finland and Germany are assumed to be affected on a par with Sweden, while development is assumed to be worse in the UK, Denmark and Norway (mainly due to falling asset prices and exposures to the shipping sector in Norway). Loan loss levels for other lending vary from 0.5 per cent for credit institutions to ten per cent for lending in Russia.

106 See Sveriges Riksbank (2009), "Monetary Policy Update", April.

Table 3:4. Assumptions regarding loan loss levels

Average loan loss level per year during 2009 and 2010 as percentage of lending

Type of exposure	Loan loss level
Swedish households mortgages	0.2%
Swedish households other	2.5%
Swedish companies mortgages*	0.7%
Swedish companies and other	2.5%
Sweden total (as average)	1.3%
Denmark	Sweden x 1.5
Norway	Sweden x 1.5
Finland	Sweden x 1
United Kingdom	Sweden x 3
Germany	Sweden x 1
Baltic countries	10%
Ukraine	30%
Poland	5%
Russia	10%
Credit institutions	0.5%
Other	2.5%

Note. * denotes the major part of lending to companies mortgages is lending to tenant-owned apartments and apartment buildings.

Source: The Riksbank

In order to calculate the banks' Tier 1 capital ratios at the end of the scenario the following assumptions are made.¹⁰⁷

- The stress test is done on a group level
- Profits before loan losses are based on the market participants' forecasts for the respective major banks in 2009 and 2010.¹⁰⁸ In the scenario, it is assumed that the banks' earnings are only 85 per cent of consensus.
- The banks pay no dividends to their shareholders during the scenario period.
- There is no growth in the loan volumes.
- The exchange rate of the Swedish krona is assumed to remain unchanged during the two years of the scenario.
- Due to poorer credit quality, it is assumed that risk-weighted assets will increase by an average of five per cent per year.
- The loan losses that arise during the scenario are deducted from the risk-weighted assets at the end of each year.
- Nordea's, Swedbank's and SEB's rights issues as well as hybrids done in the first quarter of 2009 are included in the calculation of the Tier 1 capital base for the beginning of 2009.

The results of the stress test show that the loan losses of the four major banks total over SEK 300 billion during the two years of the scenario (see Table 3:5). Due to the loan losses, the banks' Tier 1 capital ratios in the final year of the scenario will be between 4.8 and 8.3 per cent (see Table 3:6 and Chart 3:22). This means that all the

¹⁰⁷ The Riksbank's stress test excludes off balance sheet credit exposures.

¹⁰⁸ See SME Direkt (2009), May.

banks, even in the stress scenario, would meet the statutory minimum requirement of four per cent. When one compares the bank's Tier 1 capital ratios, one should bear in mind that a bank's Tier 1 capital may also include hybrid capital, which is often deemed to have a weaker loss-absorbing capacity than common stock. The Tier 1 capital of the four major Swedish banks consists of hybrid capital to a varying extent. The percentage is highest at Handelsbanken and lowest at Nordea. Just under 40 per cent of the loan losses in the stress test come from the banks' operations in the Baltic countries and in the rest of eastern Europe. The loan losses in the Baltic countries average 10 per cent per year of the banks' lending there. This means that the scenario has an even greater negative impact on the banks that have exposures to the Baltic countries and other countries in Eastern Europe.

Table 3:5. Total loan losses for the major banks, SEK billion¹⁰⁹

Lending to the public and credit institutions	7,200
Total loan losses 2009 and 2010	311
Total loan losses 2009 and 2010 as a percentage of lending	4.3%

Source: The Riksbank

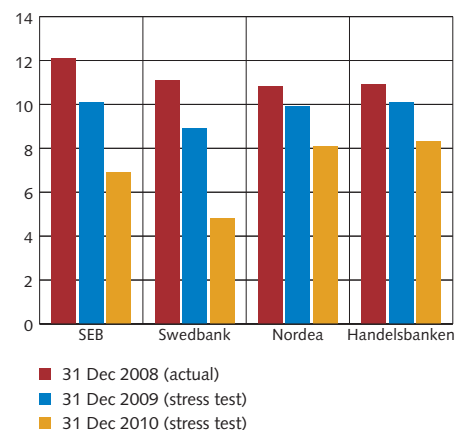
Table 3:6. Results and Tier 1 capital ratios in the stress test for the four major banks
SEK, billions

	Swedbank		Handelsbanken		SEB		Nordea	
	2009	2010	2009	2010	2009	2010	2009	2010
Operating profit before loan losses	15	14	15	15	14	15	36	37
Loan losses	31	44	20	28	29	42	48	70
Operating profit after loan losses	-15	-29	-5	-13	-15	-27	-12	-33
Tax	0	0	0	0	0	0	0	0
Net profit	-15	-29	-5	-13	-15	-27	-12	-33
Tier 1 capital at start of year	77	62	79	74	99	84	200	187
Tier 1 capital at end of year	62	33	74	62	84	57	187	154
Risk-weighted assets at end of year	699	688	738	745	828	826	1,885	1,906
Tier 1 capital ratio at end of year	8.9%	4.8%	10.1%	8.3%	10.1%	6.9%	9.9%	8.1%

Note. The figures in the table are rounded off. The Tier 1 capital ratios are calculated according to Basel II without transitional rules.

Source: The Riksbank

Chart 3:22. The banks' Tier 1 ratios
Per cent



Note. The Tier 1 ratios are calculated according to Basel II without transitional rules.

Sources: Bank reports and the Riksbank

¹⁰⁹ The loan losses are calculated on the basis of the lending volume on 31 December 2008 and are rounded off. In the scenario it is assumed that there is no growth in the stock of loans. The loan losses that occur will, however, reduce the stock of loans. All repos are excluded.

In the event of considerable loan losses, the capital situation of the banks may impose restrictions on the supply of credit. If the stress scenario were to become a reality the banks would probably experience greater funding difficulties, credit ratings would be put under pressure and a crisis of confidence could arise. This would force the banks to strengthen their capital situation. The banks can do this in two main ways: first, they can issue new capital; second, they can reduce their lending or reduce their risk-weighted assets in some other way. It is of course better to strengthen the capital base before increased loan losses occur. Once loan losses do occur, it will probably be both more expensive and more difficult, or even impossible, for the banks to acquire new capital. In such a situation there is a risk that there will be a tightening effect on the banks' lending. An important factor in determining to what extent capital will constitute a restriction on the provision of credit in the future is the extent of the loan losses suffered by the banks.

In February, the government introduced a capital infusion programme with a framework of SEK 50 billion. Under this programme, Swedish banks with their offices registered in Sweden can apply for additional capital from the State, the aim being to make it possible for the banks to increase their lending without seriously undermining their capital situation.¹¹⁰ The conditions are designed so that it is in the interests of the banks, in the first instance, to request a capital injection from the government in connection with a standard issue on the market. The programme thus complements the ability of the market to fund a bank. The type of capital, that is share capital or so-called hybrid capital, that is needed in connection with a government capital injection may vary from bank to bank. Generally speaking, however, the need for common stock in the capital base will probably increase as the outlook deteriorates. The sum that the government has injected in connection with Nordea's rights issue lies within the framework of this programme.

Summary of risks for the major Swedish banks

Over the last six months, the focus on the banks' loan losses has increased. In the Riksbank's main scenario, loan losses are expected to total SEK 170 billion in 2009 and 2010. Slightly less than 40 per cent of these losses are expected to stem from the bank group's operations in the Baltic countries and the rest of eastern Europe. The main scenario is that the banks will make substantial loan losses but that they will meet the statutory capital adequacy requirements by a good margin. There is, however, a risk that the situation of the banks will deteriorate even further. This applies in particular to the banks'

¹¹⁰ Each institution can apply for injections corresponding to an increase of two per cent in the capital adequacy ratio the institution had at the turn of the year. Injections can be made either in the form of shares or in the form of hybrid capital.

operations in the Baltic countries. The Riksbank therefore presents the results of a less likely stress test in which a much worse scenario is assumed. According to this test, the effects of a much more severe economic downturn in Sweden and abroad than assumed in the main scenario would lead to even greater loan losses. Nevertheless, all of the banks would still meet the statutory minimum requirement of a Tier 1 capital ratio of four per cent. However, such a scenario could have consequences for the banks in the form of, for example, funding difficulties and lower credit ratings. If a scenario similar to the one in the stress test were to occur, the banks would therefore probably need to increase their equity by issuing common stock. If, in such a situation, the access to private capital would be limited, there is the possibility that the government will inject capital from the stability fund.

Apart from the capital situation of the banks, their liquidity situation still constitutes a risk. Approximately half of the banks' funding will mature within one year. Even though there are some signs that the international credit markets have begun to function somewhat more effectively, it is still difficult and costly for the banks to issue securities. At the same time, the sensitivity to individual shocks on the international financial markets is still great. The confidence crisis may therefore gain new impetus, with consequences for the ability of the banks to acquire funding. The risk is greatest for the banks' market funding in foreign currencies. The Riksbank will, however, continue to take the necessary measures.

The authorities are well prepared to handle any problems in the period ahead. The auxiliary legislation that the Riksdag (the Swedish parliament) adopted in the autumn of 2008 gives the government a broad mandate to support or reconstruct a bank with serious problems. The legislation makes it possible for the Swedish government to intervene to protect financial stability in a way that safeguards the interests of the Swedish taxpayers. All-in-all, it is therefore the Riksbank's assessment that the Swedish authorities can handle the problems that could arise if the situation develops as badly as in the Riksbank's stress test, or even more negatively.

The financial infrastructure – in brief

The Swedish financial infrastructure meets sound international standards and has worked well even during the financial crisis. This is revealed by the Riksbank's annual assessments of the systems in the Swedish financial infrastructure and the interviews that the Riksbank has conducted with owners of and participants in the system on their experience.

Euroclear Sweden¹¹¹ and Bankgirocentralen BGC AB (BGC) fully observed all the assessed standards, while RIX observed all the standards except the standard for operational risks, which is only partly observed. NASDAQ OMX Derivatives Markets (NASDAQ OMX DM) observed all the standards except the standards concerning corporate governance and operational risks, which are both partly observed.

The financial infrastructure consists of systems that handle payments and transactions with securities. If these systems fail to work as intended there is a risk that problems on the part of one participant or in one submarket will spread, which can lead to disruptions in the financial system. An effective financial infrastructure is thus crucial to financial stability. One of the Riksbank's tasks is therefore to oversee, or monitor, the financial infrastructure. This work focuses on the critical systems within the financial infrastructure: these are deemed to be RIX, which is the Riksbank's system for large-value payments; BGC, which is the intermediary for retail payments; Euroclear Sweden, which is the central securities depository in Sweden and NASDAQ OMX DM, which is the central counterparty in derivatives trading.¹¹² The monitoring work is conducted on an ongoing basis and includes assessing the systems each year in accordance with international standards. The assessments are published in full on the Riksbank's website and the aim is that the system owners should take account of the results and remedy any faults or deficiencies that are identified.

This chapter begins with a section on experiences of and lessons learned from the financial crisis. The section is largely based on the interviews that the Riksbank conducted with system owners and system participants during the spring. The chapter concludes with a section that presents important events in the Swedish infrastructure and the results of the Riksbank's annual assessments. A separate box deals with the treatment of counterparty risks in the financial infrastructure.

111 Due to the Euroclear Group's acquisition of VPC, VPC's legal name was changed to Euroclear Sweden in early 2009.

112 Apart from overseeing the Swedish infrastructure the Riksbank is also involved in overseeing the international systems Continuous Linked Settlement (CLS) and The Society for Worldwide Interbank Financial Telecommunication (SWIFT). The Riksbank does this by participating in international working groups under the management of the Federal Reserve Bank of New York with regard to CLS and Banque Nationale de Belgique with regard to SWIFT.

The financial infrastructure during the financial crisis

The Swedish financial infrastructure has functioned well during the financial crisis. Volatility on the financial markets and the activity in the systems have been higher than normal. The systems have, however, been able to cope with the increased flows and have thus contributed to the stability of the financial system as a whole. It has also become clear during the crisis that the propensity to take risks declines when there is a great deal of uncertainty on the market, and that a secure and reliable infrastructure to minimise these risks then becomes increasingly important. During the current crisis, the banks, for example, have benefited from the secure settlement of currency transactions offered by the international system CLS. It has, on the other hand, become clear that work remains to be done to improve security in the handling of transactions on some submarkets. This applies in particular to the market for certain derivative products where infrastructure weaknesses have come to light that have contributed to an unwillingness on the part of market participants to trade in the products. In this area, the international efforts to find more secure solutions have intensified (see the box "Handling counterparty risks in the financial infrastructure").

Handling counterparty risks in the financial infrastructure

During financial crises, a secure and reliable infrastructure is particularly important to the willingness of the participants to act on various financial markets. The current financial crisis has demonstrated that there exists a need for improvements to the financial infrastructure, above all in areas where there lacks sufficient support for the management of counterparty risks. This box addresses how measures to strengthen arrangements for the management of counterparty risks in the financial infrastructure can help to increase stability in a turbulent financial environment.

Counterparty risks arise naturally in the course of trading.¹¹³ Whether it is a question of the delivery of a payment or a security there is a risk that one of the parties will fail to carry out the contracted transaction. The participants can manage this risk themselves by means of bilateral counterparty risk arrangements that include monitoring counterparties, limiting exposures, control routines, exchanging collateral and, in certain cases, netting exposures. Alternatively, the participants can use an infrastructure service that manages this risk.

One example of such a service is Continuous Linked Settlement (CLS), which is an international system for the settlement of the flows that arise in currency trading. The level of risk may be high in bilateral currency transactions if one of the parties pays in its currency at a much earlier stage than the other, a situation which can arise due to time differences. In CLS, however, the two payments in a currency transaction are settled at the same time, so-called payment versus payment settlement. This reduces counterparty risk as the payments are made simultaneously. During the financial crisis, turnover on the currency market has continued to be high and the volumes in CLS have reached record levels.¹¹⁴ It seems

likely that the secure settlement provided by CLS has been of significance to the participants' willingness to continue trading.

Another example of an infrastructure service that facilitates the management of counterparty risks is that of the 'central counterparty' (CCP). A central counterparty acts as a seller to all the buyers and as a buyer to all the sellers, and thus assumes the counterparty risk that the buyer and seller would bear towards each other. When the US investment bank Lehman Brothers filed for bankruptcy protection, it became apparent that those Lehman positions that were managed by a central counterparty could be settled relatively quickly and without serious disruptions. On the other hand, the transactions that were conducted bilaterally, without a central counterparty, were considerably more difficult to manage as a result of the higher counterparty risk.

The question of central counterparty services has been of particular interest in connection with the trade in credit derivatives or 'Credit Default Swaps' (CDS). A CDS is a contract between two parties in which one of the parties buys protection against the credit risk in a bond through the payment of a premium. The other party assumes the credit risk in return for the premium. The instrument functions as a form of insurance. The risks implied by this type of contract, including the replacement cost risk for the buyer if the seller defaults, that is the cost of replacing the contract with a new one, have generally been managed bilaterally in that the parties have pledged collateral when purchasing the credit derivatives and in connection with value changes. However, this process is very labour-intensive and also entails operational risks. During the financial crisis, problems have also arisen in the management of transactions with these instruments. Once two parties have entered into a transaction, both parties must confirm the conditions

¹¹³ Counterparty risk can be divided into two components: credit risk and replacement cost risk. Credit risk entails the risk that one of the counterparties fails to meet its obligations and that the other counterparty thus loses the underlying value in a transaction. Replacement cost risk entails the risk that a buyer incurs extra costs for the replacement of a contract if the seller goes bankrupt.

¹¹⁴ See <http://www.cls-bank.com>

governing the transaction, after which the transaction must be monitored and, finally, settled. Already before the crisis developed, new routines were introduced for the management of these bilateral transactions, in part in order to standardise the confirmation process and the management of the documentation concerning the transaction. Nevertheless, delays have occurred during the crisis.

It is against this background that US and European authorities have worked during the winter on measures to stabilise the market for credit derivatives. With the same aim in mind, the major participants on this market have agreed on a global standard that has been drawn up by the International Swaps and Derivatives Association (ISDA). One of the most important changes is the introduction of a central counterparty (CCP) in the form of a clearing house in both the United States and Europe.

The introduction of central counterparties can increase the effectiveness of risk management and reduce counterparty risks. It can also increase the efficiency of transaction management. A central counterparty introduces

conservative risk management methods and fixed standardised routines for, for example, transaction and security management. However, the major point is that the CCP becomes a counterparty in securities transactions. The sellers and the buyers then acquire obligations in relation to the central counterparty rather than to each other. The central counterparty takes no positions itself and is thus not exposed to market risk but only to counterparty risks. To manage these risks, the central counterparty sets high requirements for membership, requires collateral and has its own financial resources that can be used if a participant defaults.¹¹⁵

One aspect to observe regarding central counterparties is the high concentration of risk that they may entail. In order to counteract this, the central counterparty must itself meet high standards for organisation, technical systems and risk management. A central counterparty, furthermore, only handles standardised transactions. In the case of non-standard products it will continue to be important for the market participants to strengthen their own risk management.

¹¹⁵ See Financial Stability 2002:2 for a comprehensive review of the manner in which a central counterparty functions.

Interviews with the owners of and participants in the infrastructural system in Sweden reveal that confidence in the Swedish infrastructure has been high during the financial crisis. No significant problems have been experienced in either their own systems or routines or in other parts of the infrastructure. Both system owners and participants have, however, increased their focus on their counterparties by monitoring their exposures. In some cases, they have also increased the collateral requirements. The participants have also attached a lot of importance to conservative payment routines, such as minimising involuntary intraday credit, and to the functions in their own systems for checking payments. The internal information routines and communication between the system owners and their participants have worked well during the crisis. The authorities are perceived to have also contributed by providing clear information. The legal structure of the systems has also worked satisfactorily, even though some unclear points that may have minor legal consequences have been noted. While it is believed that the routines for dealing with operational disruptions have been satisfactory, some system owners and participants report that they have strengthened their routines for handling financial problems on the part of a participant or customer and that they are planning to do additional work on this in the near future.

The systems in the Swedish financial infrastructure

The systems in the Swedish financial infrastructure are working well. The Riksbank's assessments of the systems reveal that the systems¹¹⁶ observe most of the international standards on which the oversight of the systems is based.¹¹⁷ BGC and Euroclear Sweden fully observe all of the evaluated international standards, while RIX fully observes all but one standards fully, and NASDAQ OMX DM fully observes all but two standards (see Table 4:1).

116 The assessments concern the systems in 2008 with the exception of the RIX assessment, which applies to the new system that was commissioned in February 2009, and parts of the assessment of BGC that relate to a settlement agreement that began to apply in connection with the commissioning of the new RIX system.

117 The Riksbank bases its oversight of the infrastructure on international standards. These standards have been drawn up by the Committee on Payment and Settlement Systems (CPSS), and the supervisory authorities' umbrella organisation, the International Organisation of Securities Commission (IOSCO). The standards are assessed in accordance with the scale fully observed, largely observed, partly observed or not observed.

Table 4:1. The Riksbank's assessment of the Swedish financial infrastructure

System	In what function is the system critical?	Evaluated in accordance with international standards	Results of assessment
RIX	The Riksbank's system for large-value payments	Core Principles for Systematically Important Payment Systems, Committee on Payment and Settlement Systems, BIS, January 2001 (ten standards).	Fully observes all standards except one which is partly observed
BGC	The central clearing house for retail payments between the banks	Core Principles for Systematically Important Payment Systems, Committee on Payment and Settlement Systems, BIS, January 2001 (ten standards).	Fully observes all standards
Euroclear Sweden	The central securities depository in Sweden	Recommendations for Securities Settlement Systems, CPSS-IOSCO, BIS, November 2001 (19 standards)	Fully observes all standards
NASDAQ OMX DM	Central counterparty and clearing organisation for derivative instruments	Recommendations for Central Counterparties, CPSS-IOSCO, BIS, November 2004 (15 standards)	Fully observes all standards except two which are partly observed

Note: For the complete assessments see www.riksbank.com.

Source: The Riksbank

The new technical system for RIX was commissioned in February 2009. Commissioning was carried out without encountering any problems and, since then, the system has worked satisfactorily. The new system has six different settlement functions which means, among other things, that the banks can manage their liquidity more effectively than previously. As a result, the need for liquidity in the system has declined. The overall assessment is that the new system will be able to improve the efficiency of the payment system. The number of transactions has increased since the new system was commissioned, although the turnover is the same. This is because the speed of the system allows the participants to refrain to a greater extent from aggregating the payments before sending them to RIX. The number of payments sent to RIX is thus higher, while the total value of the payments remains the same.

The assessment of the new technical system shows that it fully observes all standards but one. The standard for operational risks is partly observed. The system has two technical facilities that are geographically separated; a main facility (primary site) and a reserve facility (secondary site). If the operation of the main facility is disrupted, the reserve facility is intended to guarantee the continued operation of the RIX system. However, at present, these facilities are not entirely independent of each other. A fault in communication between the two systems can thus put both facilities out of action. The Riksbank, which owns RIX, is working on a solution that separates the networks as much as possible but that still provides simultaneous updating at the two facilities. The assessment also

revealed that the system is dependent on key personnel to an extent that must be dealt with. Such dependence may lead to resource problems, especially if the system suffers a long breakdown.

This year, BGC will outsource the IT operations that relate to Bankgiro products to subcontractors under an operational contract.

The British company Vocalink will take over these IT operations. The reason for the collaboration between the companies is the desire to improve the efficiency of the operations in order to meet the demands of the market for new payment products. BGC implemented a number of changes in 2008 with the result that the system now fully observes all the evaluated standards. Changes were made with regard to the routines for handling default in the multilateral and bilateral flows.¹¹⁸ In the event of defaults, that is when participants fail to meet their obligations in the system, the problems are now handled on the same day as they arise, which is earlier in the process than previously. This is an important precondition for maintaining a low level of liquidity- and credit risk in the system. The standards that deal with technical continuity and efficiency have not been evaluated as they will change when IT operations are outsourced under an operational contract. A detailed examination of these two standards will be conducted in the next assessment and they will also be in focus in the ongoing oversight of the system.

VPC has changed its name to Euroclear Sweden. In July last year, the four main owners Nordea, SEB, Svenska Handelsbanken and Swedbank announced that they would sell their holdings in NCSD Holding, which included VPC, to Euroclear.¹¹⁹ The deal was completed in October 2008, which means that Euroclear is now a participant on the Swedish market. Euroclear also has operations on the Finnish, Belgian, Dutch, French, British and Irish markets.

In Euroclear Sweden, the percentage of shares that are settled in time, the 'settlement ratio', has fallen recently. This is because, for a variety of reasons, the participants have not been delivering securities in time. Traditionally, a lower settlement ratio is due to the fact that there are too many steps to the end-customer, which may for example be the case for a foreign end-customer. It may also be because a participant has sold on a security without having access to it and has then not gained access to the security as expected. The lack of serious sanctions also makes it cheaper at present to refrain from delivering securities than to borrow them. The financial crisis may also have altered behaviour on the market in a way that has had an impact on the settlement ratio. One example of this is the increasing unwillingness to lend securities, which may be due to uncertainty about whether those one lends to will return the securities. This

¹¹⁷ A multilateral flow is a flow in which more than two participants net their flows against each other.

¹¹⁸ VPC has been owned by NCSD Holding AB (NCSD Holding) since 2006 and VPC has in turn owned its Finnish equivalent APK since 2004.

may also be a result of amended principles governing the lending of securities. Euroclear Sweden is working actively together with the participants in the system to resolve this problem.

The settlement ratio on the money market is high and has remained unchanged for quite some time. An important reason why the money market does not have the same problems as the stock market is that there are significantly fewer participants on the money market. This means that it is much more noticeable if a participant fails to meet its obligations in the system. Although the problem regarding the settlement ratio for shares is noted in the latest assessment of Euroclear Sweden, the system nevertheless observes all the standards. The Riksbank also notes, that with regard to cash settlement there are only a few banks that act as liquidity banks, which means that exposure to these banks is high. However, this stems from the fee structure in RIX and is not therefore something that it is up to Euroclear Sweden to change.

The integration of NASDAQ and OMX was initiated in 2008. The integration of these two companies has led to a name change and a reorganisation, among other things. These changes have not, however, affected trading in either shares or derivative products. At the end of March 2009, NASDAQ OMX introduced the possibility to trade and clear shares through a central counterparty. This service is still voluntary but the plan is that all share settlement, from and including the autumn of 2009, will be conducted through a central counterparty. Central counterparty clearing has been available in NASDAQ OMX DM's derivative operations for a long time. The Riksbank's latest assessment indicates that NASDAQ OMX DM fully observes all the standards except those applying to corporate governance and operational risks, which are broadly observed. As regards corporate governance, the internal control system needs to be improved so that it can catch the problems that may arise in different parts of the organisation in a timely manner. The exchange of information between system operations and the risk management function at NASDAQ OMX DM should also be examined so that those problems arising receive a correct risk assessment. In 2008, NASDAQ OMX DM did not perform any overall analysis of the central counterparty's operational risks. This standard is therefore only broadly observed. Conducting such an analysis continuously and without interruption is important in order to be better prepared for the operational risks that can arise. It is also recommended that NASDAQ OMX DM increases the transparency of its operations by publishing more statistics so that they also include statistics on availability and the value of collateral pledged to NASDAQ OMX DM, which is deemed to be valuable information for the customers.

■ PART 2. ARTICLE

■ Global recession and financial stability

Introduction

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.

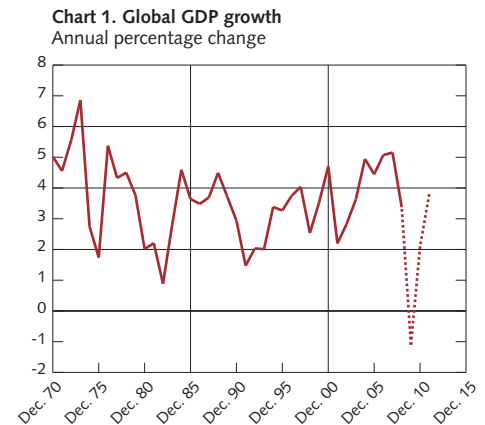
The article starts with an overview of the current macroeconomic situation. A number of crises occurring since the beginning of the 1990s are then examined, followed by what lessons can be learnt from them with regard to the current crisis. In conclusion there is a section on what government agencies worldwide are doing to protect financial stability and prevent a deepening of the economic crisis.

Global recession and impaired credit quality

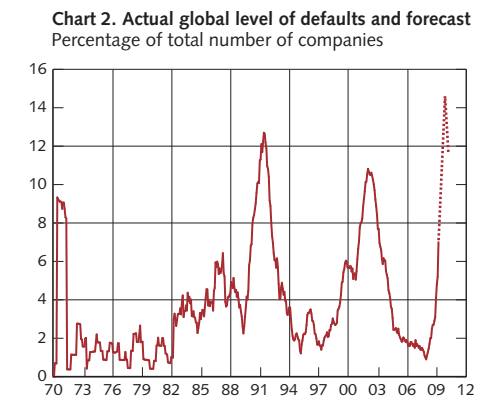
In 2008 it became increasingly clear that the world economy was starting to weaken. But it was not until the autumn, when the financial crisis gained a serious foothold in global financial markets, that the economy showed a clear decline. Uncertainty as to the creditworthiness of borrowers increased fast and the supply of credit decreased. A consequence of this is that the global economy is now in recession. In 2009 world GDP is expected to fall by 1.1 per cent.¹²⁰ A fall of such proportions is unique in modern times (see Chart 1). As the economic downturn deepens, companies' earnings and profitability are deteriorating and unemployment is rising fast. This can be seen not least in the rising percentage of bankruptcies; a development that is expected to continue (see Chart 2). For banks, this means deterioration in credit quality.

At the same time there is still uncertainty as to future developments. Even though the most acute crisis has abated and there are some rays of light, parts of the financial markets are still malfunctioning, which reduces the chances of a rapid economic recovery. Developments are also dependent on the extent to which the expansive economic policy being pursued in many countries, succeeds in stimulating the economy.

If the recession deepens even more and credit quality continues to deteriorate there is a great risk of further credit restraint. In such a situation it is possible that even creditworthy companies and households will be refused credit (a credit crunch). This means that



Sources: IMF and the Riksbank



Note. The chart refers to companies classified as Ba/BB or lower by Moody's/Standard & Poor's, as the majority of total defaults take place among companies with this classification.

Sources: Reuters EcoWin and Moody's

120 See Sveriges Riksbank (2009), "Monetary Policy Update" April.

the credit supply will decrease even more and the economic downturn will be steeper. The negative interaction between the financial markets and the real economy then risks being intensified. Poorer credit quality also means that investors are more careful in a situation when the banks need to strengthen their capital base to meet higher loan losses. To the extent the banks can obtain funding in the market, it is at a higher cost.

Previous financial crises

Consequently, the economic situation is highly uncertain and the recession may be both deeper and longer than is currently expected. It is inevitable that banks' loan losses will increase, but the size of the increase and its impact on the financial system as a whole is difficult to predict. Financial crises are by no means unusual – since 1980 there have been over 100 in various parts of the world. These crises have all, to varying degrees, had an impact on the real economy and banks' loan losses. Even if there is much in today's crisis that is different, previous crises can give an indication of what we can expect from this one. We have therefore chosen seven crises occurring in the past twenty years to examine in more detail.

THE BANK CRISIS OF 1991-1993 IN SWEDEN ¹²¹

The Swedish bank crisis in the early 1990s presents itself immediately.¹²² The underlying reasons for the crisis have been well described: it was a matter of highly necessary but not fully prepared deregulation of the credit market and currency flows to and from Sweden. Pent-up borrowing requirements after many years of regulation led to a very fast increase in credit. The credit expansion was heightened by favourable tax rules that gave negative real interest rates after tax to borrowers. The rapid rise in lending set in motion a strong and sustained upswing in property prices – in both the commercial and private housing markets. New construction also increased fast. At the same time there were great weaknesses in the regulatory supervision of the financial sector and the banks' own risk management.

A number of events took place in the early 1990s that triggered the crisis:

- There was a downturn in the global economy. This resulted in a substantial fall in Swedish exports. In addition, cost pressure had been high for several years, which had reduced the competitiveness of Swedish exports. As a consequence, a number of companies, some of which were relatively large, had payment problems. At the same time the property value bubble

¹²¹ See Sveriges riksbank (2008), "From local to global –today's crisis in the light of yesterday's", Financial Stability Report 2008:2.

¹²² At that time Sweden suffered a triple crisis: a bank crisis, a currency crisis and a budget crisis. Here only the bank crisis is discussed.

burst. The greatest fall in prices was in commercial properties in expensive inner city locations. This resulted in payment problems for companies in the property sector.

- In 1990-1991 finance companies were hit by a crisis of confidence that made it considerably more difficult for them to obtain funding in the market. A number of finance companies failed, while others received support from affiliated banks and other owners.
- In 1992 the confidence of foreign lenders in Swedish banks fell substantially reducing lending to them. As a result of the decline in market funding, Swedish banks suffered liquidity problems. However, there were no major runs on banks. Later in the year attacks on the Swedish krona intensified, which in November led to the decision to allow the krona to float. In effect this meant a substantial devaluation. However, many Swedish borrowers had borrowed in foreign currency despite having earnings in Swedish kronor. Hence, the considerable weakening of the currency entailed further payment difficulties and bankruptcies.
- There was a simultaneous change in economic policy towards lower inflation and reduced tax allowances on interest. Consequently, real interest rates after tax became positive.

Bank loan losses rose steeply during the crisis. A rough calculation shows that about two thirds of the loan losses originated in the property sector. Apart from loans to property companies, this figure includes loans to construction projects and loans with property as collateral. A large proportion of the remaining losses came from export and import related companies. An interesting observation is that while loans to private individuals constituted 60 per cent of the banks' loan portfolios, they accounted for less than ten per cent of the loan losses. Thus, lending to companies and other borrowers, representing 40 per cent of the portfolio, accounted for over 90 per cent of the losses. At most in an individual year (1992) loan losses were seven per cent of the loan stock. Problem loans in the same year amounted to 13 per cent.

Altogether during the bank crisis of 1991-1994 the banks' loan losses were at least SEK 175 billion, which is about 13 per cent of average lending in those years. This should be put in relation to the banks' total capital, which in 1992 was SEK 64 billion. Consequently, the banks needed considerable infusions of capital and these were given in various forms. For example, SE-Banken and Föreningsbanken issued new shares, while the government contributed share capital to Nordbanken and capitalised the surviving part of Gotabanken. The government also used considerable amounts to fund Securum and Retriva, the two investment companies tasked with managing, improving and selling bad assets from Nordbanken and Gotabanken.

The government also granted loans to the savings bank foundations to allow them to finance the merger of the failing Första Sparbanken with Sparbankernas Bank. Moreover, the government issued guarantees for possible future capital support to Föreningsbanken.

Apart from individual measures for certain banks the Riksdag also decided on an overall guarantee ensuring that no-one could lose on their exposures to Swedish banks (and some credit market companies) except their owners. The financial outlays for government measures under the support programme are estimated at SEK 65 billion, which is just over four per cent of GDP in 1992. This entire amount was recovered through sales of assets and sales of government shareholdings in the banks taken over, dividends and holdings of remaining shares in Nordea.¹²³

The bank crisis in Sweden lasted from 1991 to 1993. In these years the country's GDP fell by over six per cent.¹²⁴ In 1994 GDP growth was again positive, as were banks' earnings in relation to their loan losses. In these respects the crisis can therefore be said to have lasted for three years, but it took a long time before the economy returned to its previous growth path and before the central government budget was in balance.

THE BANK CRISIS IN FINLAND 1991-1993

While the Swedish crisis was in progress Finland experienced an even deeper crisis. The factors behind the Finnish crisis were mainly the same as in Sweden – deregulation of the financial sector that contributed to rapidly rising household and corporate indebtedness. Sharply rising property and share prices were also an element. Additionally, just like Sweden, Finland had a fixed exchange rate that was subjected to speculative attacks in autumn 1992 and that finally had to be allowed to float. When the first warning signs were seen in banks' balance sheets in 1990-1991 Finland, just like Sweden, had no specific framework for dealing with bank crises. This meant that the Finnish central bank had to take responsibility for measures in the first phase of the crisis. For example, the central bank took over Sparbankernas Central-Aktie-Bank (SCAB) in autumn 1991. In connection with the takeover the savings banks suffered a confidence crisis, resulting in mergers between several banks and the establishment of a large nationwide bank, Sparbanken i Finland. But the economic situation deteriorated further and it became increasingly clear that the crisis threatened the entire financial system in Finland. To tackle the problems the Government Guarantee Fund was established under the provisions of an Act that came into force in spring 1992. The tasks of the Government Guarantee Fund included

¹²³ The sales values are not discounted, but on the other hand there are a number of positive effects that are not included.

¹²⁴ Refers to the change in GDP between the first quarter of 1991 and the first quarter of 1993.

giving injections of capital to the bank sector. The gross cost to the government (without recoveries) for recapitalising the banks was over eight per cent of GDP. The support went almost exclusively to the savings banks. The government also established a state-owned investment company, Arsenal AB, tasked with managing the problem assets of these banks. The company managed repossessed collateral mainly in the form of real property, credits, shares and participations in property and housing companies.

In the course of the crisis the government had to take over several banks. These banks together accounted for over 30 per cent of deposits in the bank system. The gross cost to the state for the Finnish bank crisis was estimated to be over twelve per cent of GDP.

Even if the run up to the crisis itself and a major part of the solutions for dealing with the crisis resemble the Swedish bank crisis, the crisis in Finland was deeper than in Sweden. This was largely due to a fall in external demand when the Soviet Union was dissolved. At that time Finnish exports to the Soviet Union more or less came to a standstill when the bilateral trade agreements between the countries ceased to apply. Unlike Finland, Sweden was helped out of the recession thanks to strong exports. Another reason for the deeper crisis in Finland was that the upswing in property and share prices before its outbreak had been sharper there than in the other Nordic countries.

THE 1997 ASIAN CRISIS

Some years after the Nordic bank crises, several countries in South East Asia were affected by a financial crisis. This crisis was also preceded by several years of high economic activity and steeply rising prices for property and other assets. These factors played a role in the run up to the crisis but the main reason was weaknesses in the financial system. As a consequence of rapid deregulation of the capital markets and fixed exchange rate systems, great imbalances built up. Financial institutions and companies obtained funding largely through foreign capital without any insurance against currency risk. Large inflows of capital also meant that substantial current account deficits built up in several Asian countries. Moreover, the banks' lending was at long maturities financed by loans at short maturities in foreign currency, which meant that the banks were exposed to liquidity risk if capital flows turned.

When the economy in due course turned, first in Thailand, several financial institutions with large exposures to the property sector fell. This was the starting signal for a series of speculative attacks on the Thai currency, the baht, which was ultimately left to float. Pressure thereafter increased on other countries with similar imbalances in their financial systems, such as the Philippines,

Indonesia, Malaysia and South Korea, starting a vicious circle. Devalued currencies and continued outflows of capital made more financial institutions insolvent. Domestic asset prices collapsed and several institutions fell, further intensifying the drain of capital.

Despite extensive support from the International Monetary Fund (IMF) it was not possible to prevent the spread of uncertainty in the financial markets in the first stage of the crisis. This meant that the consequences for the real economy were great, with GDP decreasing considerable in 1998. GDP in Thailand, for example, fell by over ten per cent in the worst year of the crisis (1998) but started to recover relatively quickly, and in 1999 GDP growth was over four per cent. In both Malaysia and South Korea GDP fell by about seven per cent in the worst year of the crisis. In Indonesia GDP fell by 13 per cent during the corresponding year. However, recovery came fast and already in the following year growth was positive again. It took longer for the financial sector to recover though, partly due to the fact that the share of problem loans was over 30 per cent in several of the countries affected.

From the start of the crisis until mid-2002 the Thai central bank was forced to close 59 out of 91 finance companies. These accounted for 13 per cent of total assets in the financial system and over 70 per cent of the assets in all finance companies. Eleven banks were closed while four were nationalised. The state's costs for recapitalisation amounted to over 18 per cent of GDP. In Indonesia 70 out of about 240 banks were forced to close while 13 were nationalised. The cost of recapitalisation amounted to over 37 per cent of GDP. The total cost to the state of the financial crisis was, however, far higher and amounted to almost 60 per cent of GDP. This is the highest cost recorded for a financial crisis.

ARGENTINA 2001 – 2002

The crisis in Argentina was not preceded by a period of economic expansion. On the contrary, several Latin American countries suffered a protracted business recession in the 1990s with negative credit growth. Despite the fact that the banks were relatively healthy at that stage there was uncertainty as to their financial position. The downturn had entailed a sharp increase in the percentage of problem loans. At the same time the banks had increased their exposure to the public sector through purchases of government bonds.

This meant that the banks were dependent on the government making its payments. A further weakness was that a large part of bank lending to the private sector was in dollars, while borrowers' earnings were in pesos. This meant that the financial system was particularly vulnerable to exchange rate fluctuations. Already in the early 1990s Argentina had tied its currency, the peso, to the dollar through a currency board.

Weak central government finances and political uncertainty brought a gradual drop in the confidence of international investors - it was thought that Argentina would not be able to pay its foreign debt. Credit spreads between Argentinean and American bonds grew from 500 to 3 000 basis points between January 2000 and December 2002 and credit rating institutions gradually reduced Argentina's credit rating from B to the lowest level. The general lack of confidence resulted in massive runs on the banks. In 2001 the bank system lost 20 per cent of its total deposits. The government authorities responded by limiting withdrawals and transfers of deposits in domestic currency and freezing withdrawals of dollar deposits. Apart from the economic chaos, political uncertainty increased and several changes in government ensued. At the beginning of 2002 the country was forced to suspend its payments. In an attempt to rebuild the financial system there was compulsory conversion of assets and liabilities in dollars to pesos at different exchange rates. This meant that the banks' lending in dollars to the private sector was converted at one peso to the dollar, while lending in dollars to the public sector and dollar deposits were exchanged at 1.4 pesos to the dollar. The idea behind this was to protect the companies and households who had borrowed in foreign currency. However, confidence was not restored and Argentina soon abandoned the currency board and the peso was left to float. The currency quickly lost value, resulting in major losses for the banks. The government was forced to support the banks and the final bill was presented to the taxpayers.

The crisis was costly for the Argentinean state, which had to close one bank and nationalise three. The government support measures amounted to almost ten per cent of GDP. GDP growth accelerated again as early as in 2002.

URUGUAY 2002

The main reason for the outbreak of the crisis in Uruguay was the country's great regional dependence on trade which contributed to its being infected by the crisis in Argentina. 40 per cent of Uruguay's exports were concentrated to Brazil and Argentina and the country's service sector was in addition highly dependent on Argentinean tourism and Argentinean investments. In addition some imbalances in Uruguay's banking system made it extra vulnerable to external shocks. Above all, the banks' deposits and lending were heavily exposed to foreign currency; as much as 90 per cent of deposits and 80 per cent of lending. Almost half of the total dollar deposits belonged to savers outside Uruguay. The starting point of the crisis was in December 2001, when Argentina's government decided to introduce capital controls and freeze withdrawals of deposits in dollars. In consequence, Argentinean savers rushed to Uruguay to withdraw their deposits in dollars. The Uruguayan savers followed close behind and the crisis was a fact. In 2002 Uruguay's banking

system lost about 40 per cent of its total deposits and almost half of total savings in dollars. A contributory reason for the great outflow of capital was that Uruguay had no deposit guarantee scheme, apart from for the two state banks where the government guaranteed all deposits. The extensive flight of capital led several international credit rating companies to downgrade Uruguay's credit rating from investment status to junk status and the country was forced to borrow USD 1.3 billion from the IMF.

To regain confidence in the markets and avoid a total collapse of the payments system the Uruguayan authorities decided to continue to respect existing bank contracts. In contrast to Argentina they accordingly decided against freezing withdrawals of deposits and against compulsory conversion of assets and liabilities in dollars to the local currency (peso). However, the authorities created a new legal framework that allowed the banks to extend maturities (time deposits). As compensation, the interest rates on these deposits were slightly above the market rate. In total the maturities for deposits equivalent to USD 2.2 billion were extended. To ensure that banks would be able to pay their depositors, Uruguay's central bank provided liquidity support to the banks that were considered to be systemically important (mainly domestic banks). Other banks, consisting of subsidiaries and branches of foreign banks, were left to fund any liquidity needs themselves, for example by borrowing from the parent banks. The central bank's liquidity support measures were a strain on the country's foreign currency reserve, which lost 80 per cent of its value in the first half of 2002. The low foreign currency reserve level made it impossible any longer to defend the domestic currency, which was tied to a currency band against the dollar and in June 2002 the peso was allowed to float. As both the banks' assets and liabilities were to a large extent in dollars, the floating exchange rate did not have any direct effects. Indirectly, the banks were affected in that their borrowers' incomes were largely in pesos. Despite the fact that the central bank injected USD 2.4 billion into the banking system, equivalent to 20 per cent of GDP, they were finally forced to take over four domestic banks and recapitalise the country's two state banks. To deal with private banks the authorities created a new banking law making it possible for them to liquidate and reorganise banks taken over under a "good bank/bad bank" model.

In the crisis year of 2002 GDP fell by eleven per cent. However, Uruguay recovered quickly, largely due to the action of the authorities. At the beginning of 2003 savings again began to flow into the system and in the same year GDP grew by eleven per cent.

JAPAN IN THE 1990S

Like Sweden, the Japanese banking system was regulated. In return the ministry of finance implicitly guaranteed the survival of all banks; the system was therefore regarded as being fully covered against

failure. A gradual relaxing of the rules took place in the 1970s and 1980s. Just as in many other countries, this led to a rapid increase in lending and a rise in the prices of property and shares. However, prices started to weaken in the early 1990s, resulting in the banks suffering major losses and some banks had solvency problems. The authorities decided that these losses were temporary and that profitability would return when asset values took an upward turn, which would be soon. So a "wait and see" policy was adopted, despite a continuing fall in prices.

Unlike other crises, the Japanese one was more protracted; it took ten years from its outbreak until the bank system had again become profitable. The 1990s therefore came to be called "the lost decade", during which the financial system functioned unsatisfactorily. This led in turn to a long-drawn out recession and depressed asset prices.

Some reasons for the prolonged crisis:

- Authorities and banks still took the attitude that no major banks would be allowed to fail, despite the fact that the Japanese central bank had declared that it would not always defend a bank with problems. Instead, the Deposit Insurance Corporation (DIC) that was set up would help to save banks and depositors. Unfortunately the DIC was far too small to deal with the bank failures it was faced with and the authorities therefore decided to use ad-hoc solutions that meant that all depositors would be indemnified. This meant that it took until 1998 until a more systematic framework was introduced to solve bank problems.
- Problem loans were heavily under-reported in the accounts, since legislation had very strict requirements that losses really must exist before exposures were allowed to be reported as non-performing. Despite the fact that actual (but not reported) problem loans amounted to between five and eight per cent already at the start of the 1990s the crisis was not regarded as a threat to the system until 1997.
- The authorities did not have support in law to intervene as long as the banks reported profits, even though these profits were fictitious due to deficient recognition in the accounts. Not until 1997 were the rules made more flexible, resulting in major impairment losses in the accounts.¹²⁵
- By not fully recognising problem loans, the reported capital adequacy levels were overestimated. Seriously undercapitalised banks could therefore quite legally show that they fulfilled capital adequacy requirements.

¹²⁵ Despite the changes in the rules, as late as in 1999 problem loans amounted to only 7.8 per cent of GDP, which appears to be very low taking into account that the government's total cost for solving the crisis was considerably higher than in Sweden, where the percentage of problem loans was just over 13 per cent. The volume of state aid was in total 14 per cent of GDP.

- Incentives to write off and sell bad assets in the banks were very weak. Due to the very low key interest rate the cost of retaining the assets on the balance sheet was small and a sale would force write-downs to probably very low sales values.¹²⁶

As a result of the above the banks had a very limited capacity to take on new business or risks, which led to a credit crunch. Moreover, due to their weak finances, the banks could not manage to write down and sell bad loans and other assets, which delayed the restructuring of the Japanese economy.

ICELAND 2008

The crisis in Iceland is a crisis close in time, the full effects are therefore still difficult to assess. The origins of the crisis can be found in vigorous domestic expansion led by large investments in the aluminium industry. In the wake of the investment upswing private consumption rose steeply, house prices and borrowings increased fast and the current account deficit grew. To dampen the overheating, the Icelandic central bank had to raise the key interest rate. The higher interest rate made it increasingly attractive for investors to borrow money in countries with low interest rates and invest it in Icelandic interest bearing securities at a higher interest rate. This increased capital inflows to the country and imbalances continued to build up in the economy.

Parallel to the overheating, the Icelandic banks expanded rapidly outside of Iceland, primarily in the other Nordic countries and the United Kingdom. This occurred both through corporate acquisitions and opening branches. The rapid expansion led to the Icelandic banking system's assets finally being more than nine times as large as the Icelandic gross domestic product. When the financial crisis worsened in 2008, international investors began to sell their Icelandic assets, which led to large capital outflows and substantial depreciation of the currency. The lower risk appetite had a serious impact on the Icelandic banks, which were highly dependent on market financing. As a result of the banks' enormous size in relation to the Icelandic economy investors became increasingly doubtful as to whether the Icelandic state had the financial capacity required to handle a bank crisis. The Icelandic banks found it more and more difficult to obtain financing and finally, in autumn 2008, the Icelandic government had to take over the management of the three major Icelandic banks. In order to refinance the banks and stabilise the currency the Icelandic state was forced to apply for an emergency loan from the IMF.

What the full effect of the financial crisis and ensuing recession will be is difficult to say at present. The Icelandic economy is expected to shrink by about eleven per cent this year¹²⁷ with consequently

¹²⁶ Since the accounting rules did not require market value, which was another weakness.

¹²⁷ See Sedlabanki (2009), "Monetary Bulletin," Vol. 12, No. 1, May.

higher unemployment and more defaults resulting in rising loan losses.

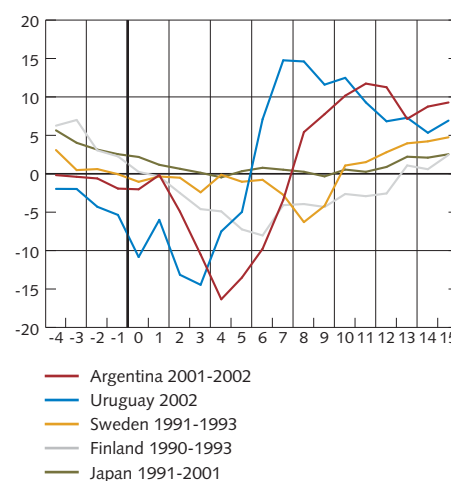
The crisis in Iceland is an example of how great the consequences can be when a small country builds up a banking system with total assets that are several times greater than the country's GDP. Apart from the Icelandic economy being hit hard, the collapse of the banking system also had consequences for other countries where those banks operated.¹²⁸

Lessons from earlier crises

First and foremost it can be noted that there are several clear similarities between previous crises. They were often preceded by deregulation of the financial sector. This led to a very rapid increase in lending while at the same time, credit checks were often deficient. Loans were often granted for commercial properties and the prices of these and other assets rose fast. This was the case in Sweden, Finland, Japan and the countries in South East Asia. When the economy later turns, prices of properties have fallen, the solvency of property companies has deteriorated and banks have suffered major loan losses. Other similarities between the crises are the fixed exchange rate systems and dependence on foreign, often short-term, capital. Large capital inflows have entailed the build-up of major imbalances in the economies. When economic conditions have changed it has led to large capital outflows, which has put a great strain on fixed exchange rates. In all cases in which countries have had fixed exchange rates that policy has had to be abandoned and the domestic currencies have substantially depreciated. Of the countries discussed in this article only Japan, Iceland and the Philippines had floating exchange rates at the time of the respective crises.

Even if underlying and triggering factors in many cases are the same the effects on the real economy, the banks and the cost to the state have differed between the crises (see Table 1). GDP fell during the crisis period, but the amount and how long the crisis lasted varied (see Charts 3 and 4). The world economy plays a decisive role here. During the Swedish banking crisis the economy in the rest of the world was considerably stronger and external demand became an important driver of recovery. For example, in 1993 Sweden's exports grew by almost 20 per cent. The depreciation of the krona also contributed to this. In the same way, the rapidly growing world economy at the end of the 1990s and up to the IT crisis was a strong growth driver for the countries in South East Asia, while severely depreciating currencies aided improvement of competitiveness. Our neighbour Finland instead experienced a deeper recession due to the country's major dependence on trade with the former Soviet Union.

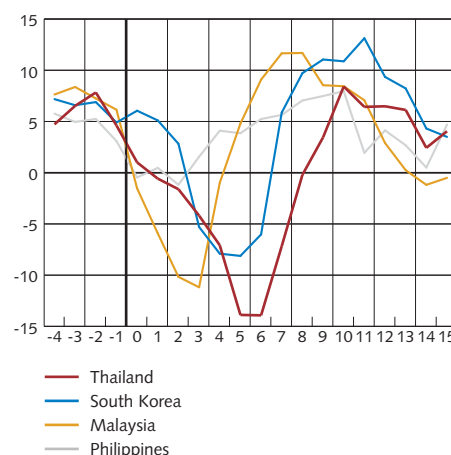
Chart 3. GDP growth during various crises
Annual percentage change



Note. Quarter 0 refers to the point at which the crisis began.

Source: Reuters EcoWin

Chart 4. GDP growth during the Asian crisis 1997-1998
Annual percentage change

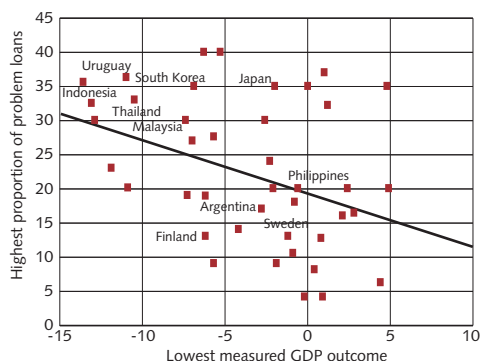


Note. Quarter 0 refers to the point at which the crisis began.

Source: Reuters EcoWin

128 See Sveriges Riksbank (2008), "Financial Stability Report 2008:2".

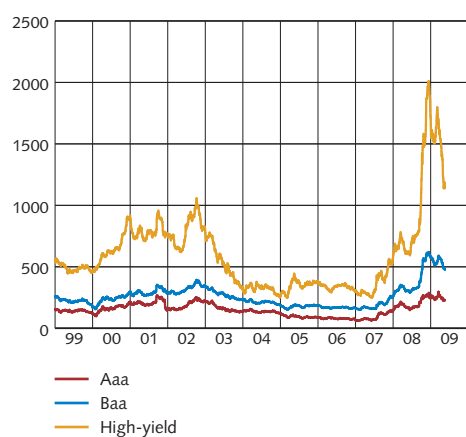
Chart 5. Proportion of problem loans and GDP loss internationally in a selection of previous crises
Per cent



Note. The definition of problem loans, which is to say the number of days which must expire before a loan is classified as a problem loan, can vary between countries.

Source: Laeven, Luc and Valencia (2008), "Systemic Banking Crises: A New Database" IMF Working Paper

Chart 6. Credit spreads for corporate bonds in the United States
Basis points



Source: Reuters EcoWin

A fall in GDP inevitably leads to a rise in loan losses. Even though major falls in GDP are associated with severe increases in the percentage of problem loans and loan losses there is a great variation (see Chart 5). For example a five per cent fall in GDP resulted in percentages of problem loans of both 10 per cent and 40 per cent. One factor that can increase the share of problem loans is if a country's currency depreciates while a large proportion of debt is in foreign currency. This entails a rapid rise in debt measured in domestic currency. This was the case in several of the crises above. But other, non-economic factors, can also explain the variation in the percentage of problem loans. For example, it is reasonable to believe that borrowers are more willing to meet their payment obligations for loans if they know that the country's legal system punishes breach of contract rapidly and effectively. The lender's willingness to modify loan agreements and cooperate constructively with the borrower may also play a role in this context. The rules governing when a loan can be regarded as a problem loan also play a part in developments. This is shown not least by the experiences of Japan.

Hence, the reasons for how problem loans develop depend on how deep and protracted the recession is and how the financial system is constructed, as well as on the exchange rate system and the country's legal system. But when there is a systemic crisis, the action of the authorities, or lack of action, plays a crucial role.

The Swedish authorities' management of the Swedish bank crisis in the early 1990s is often held up as a model, since the ultimate costs were small from an international crisis perspective. Another example is Uruguay, where the authorities, unlike the Argentinean authorities, decided to respect existing legislation. This brought a rapid recovery of confidence in the country and a renewed inflow of capital. Despite the fact that the initial costs to the state were higher in Uruguay, the economy recovered faster than in Argentina. In Japan the actions of the authorities and the formulation of the accounting rules may instead have contributed to the fact that it took longer for confidence to return and hence the economy to recover.

Table 1. GDP loss, problem loans and costs to the state for a selection of previous financial crises

	Length of crisis Years of negative growth	Greatest GDP loss in one year Per cent	Largest percentage of problem loans in one year Per cent of credit portfolio	Costs to the state Per cent of GDP
Sweden	3	2	13	4
Finland	3	6	13	12
Indonesia	1	13	33	57
Malaysia	1	7	30	16
Thailand	1	10	33	44
Argentina	2	11	20	10
Uruguay	1	11	36	20
Japan	1	2	35	14

Note. Problem loans usually increase more than loan losses, since not all problem loans result in loan losses for a bank. It is still a good indicator of how losses may develop.

Source: Laeven, Luc and Valencia (2008), "Systemic Banking Crises: A New Database" IMF Working Paper

THE PRESENT CRISIS MAY CONTINUE TO WORSEN

The present crisis was preceded, like many other previous crises, by rapidly rising borrowing and property prices, while banks in many cases underestimated and did not charge enough for the credit risk (one example is the American subprime market where borrowers with poor credit ratings were granted mortgages). But it was not only on mortgages that risk premiums fell sharply – this was true of a number of assets, which became apparent in very depressed credit spreads (see Chart 6).

The origin of the low risk premiums can be found in the circumstances that prevailed in the global financial markets and the large capital flows that helped push down interest rates. The good supply of investment capital and low interest rates on risk-free assets set in motion a hunt for returns. In other words, increased demand for higher yielding assets. This contributed to a steep rise in prices. Financial innovations, such as structured products and credit derivatives, also contributed to intensify asset price rises. Here there are many parallels to the crisis in Sweden in the early 1990s, for instance. Changes in the financial markets contributed to vigorous credit expansion while the banks, after years of regulation, had no well-established risk management. The result was incorrectly priced risk.

There are also other parallels with the Swedish bank crisis, such as the possibility of rule arbitrage. In the present crisis the specialist companies that the banks have used for securitisation have played a crucial role. The companies have not appeared on the banks' balance sheets, thus removing credit risk from there and making it unnecessary for the banks to hold extra capital for the increased risk. But committed loan facilities to the specialist companies have in practice returned the risk to the banks' balance sheets when the specialist companies have been unable to find funding in the market. It can be said that in the Swedish bank crisis the finance companies in some respects played a corresponding role. It was the finance companies that primarily gave loans for property and to construction companies. The finance companies themselves obtained short-term funding by borrowing on the securities market. Also, many of the finance companies were owned by the banks. When property prices fell and market funding declined the losses led into the banks since they were bound to the finance companies through formal and informal commitments.

Another similarity between these two crises is the existence of credit risk insurance. In the late 1980s and early 1990s the company Svenska Kredit sold credit insurance to Swedish banks. Many banks insured themselves against losses on their loans to property companies. But when the property market folded, Svenska Kredit

was unable to meet all of its obligations and consequently went bankrupt. This increased the banks' problems. Monoline insurers are the equivalent in today's crisis. Monolines are large insurance companies specialised in insuring bond loans, and recently also securities with exposures to the American subprime market.

There are further similarities between this crisis and previous crises. For example, just as in the Asian crisis large inflows of capital have caused the build-up of large current account deficits in certain regions. There are now imbalances in banking systems, where a large proportion of lending is in foreign currency while borrowers' earnings are in domestic currency, in many countries. Other similarities between these two crises and the current situation are the existence of fixed exchange rates and currency boards.

But there are also considerable differences, indicating that today's crisis may become worse than the previous ones. Above all, the previous crises were in all essentials national or regional. The world economy could then provide considerable assistance out of the crises, in most cases contributing to a relatively rapid GDP recovery. What makes this crisis different is that, as a consequence of recent years' globalisation and financial innovation, it is global and more complex than previous crises. It means that the effects are considerably more difficult to assess and predict. The crisis has simultaneously affected more countries, markets, assets and agents than ever before. In consequence, global demand has fallen sharply and world GDP is expected to shrink, which has never happened before in modern times. Thus the world economy is in many respects in a worse state than in previous crises. Moreover, studies show that recessions that coincide with financial crises often tend to be deep and protracted, as do recessions that overlap between several countries.¹²⁹

At the same time there are factors indicating that it need not be so bad. Central banks the world over, have reduced interest rates to very low levels to stimulate the economy. For borrowers this means lower interest costs than for example in Sweden in the crisis of the 1990s. Moreover, in many countries there is scope to stimulate the economy with fiscal policy measures (see below).

To date banks' write-downs and losses amount to over USD 900 billion, while the total figure for financial institutions exceeds USD 1 200 billion. IMF forecasts indicate that total global losses may exceed USD 4 000 billion or seven per cent of lending (see Table 2). Of this, USD 2 700 billion is expected to derive from American assets, which implies a degree of loss of 10.2 per cent of the outstanding amount. The bank sector is expected to account for two thirds of the write-downs and losses.¹³⁰

129 See IMF (2009), "World Economic Outlook," April.

130 See IMF (2009), "Global Financial Stability Report," April.

Table 2. Potential write-downs and losses in the financial sector
Per cent of lending, cumulative between 2007–2010

USA	10.2
Of which loans	7.9
Of which securities	12.6
EUROPE	5.0
Of which loans	4.3
Of which securities	10.0
JAPAN	2.0
Of which loans	2.0
Of which securities	2.2
TOTAL in the world	7.0
Of which loans	5.1
Of which securities	11.6

Source: IMF (2009), Global Financial Stability Report, April

Other commentators, however, believe that the figure may be even greater and that losses and write-downs on assets originating in the USA alone may reach USD 3 600 billion before the crisis is over.¹³¹ American investors hold about half of these. Loan losses alone are expected to amount to USD 1 600 billion, which is 13 per cent of the credit portfolio. However, capital requirements are expected to be higher in Europe than the USA according to IMF estimates. In the USA capital requirements are expected to be between USD 275–500 billion. The corresponding figure for the euro area is USD 375–725 billion and for the rest of Western Europe outside the euro area the figure is USD 100–225 billion. The lower limit shows the required capital to achieve capital adequacy of four per cent, while the upper limit refers to capital adequacy of six per cent. The higher capital requirement in Europe is largely due to the countries' exposures to eastern and central Europe.¹³² However, it is important to point out that these forecasts are uncertain.

Extensive measures taken by the authorities in many countries

In order to manage the problems in the financial markets, starting more than a year ago government authorities throughout the world have launched extensive programmes of action. To strengthen the liquidity supply many central banks have increased their lending and many governments have introduced various guarantee programmes. To boost banks' solvency, i.e. their ability to absorb losses and thereby their ability to survive in the long term, many governments have also provided access to injections of state capital. In countries where the regulatory framework for dealing with banking crises was inadequate, for example in the United Kingdom and Sweden, new legislation has been introduced.

Liquidity problems and solvency problems are often closely linked. The long-term survival of a basically sound bank can be threatened if for one or

131 RGE Monitor.

132 IMF (2009), "Global Financial Stability Report", April.

another reason it has problems with funding. More secure access to funding could therefore reduce the risk of liquidity problems turning into solvency problems. On the other hand, if there is uncertainty as to the solvency of a bank, there is a risk that the bank will have liquidity problems. A capital injection could therefore provide better prospects of borrowing in the market.

Apart from the bank's ability to meet its immediate commitments or absorb losses, access to both liquid funds and capital is important to the bank's ability to contribute to the credit supply in the economy. If the credit supply is neglected the effects on the real economy may be significant, which in turn has an impact on the banking system.

LIQUIDITY IMPROVEMENT

As banks' funding in private markets has become more difficult, central banks the world over have loaned large amounts to the banks at long maturities and against more types of collateral than normal (see chapter 1 and the box What is the implication of the Riksbank's extra lending?). In that way the banks' short-term funding has been improved. Several central banks have also provided emergency liquidity to individual institutions. In Sweden, for example, the Riksbank has provided special liquidity assistance to Kaupthing Bank Sverige AB and Carnegie Investment Bank AB. Many central banks, such as the Federal Reserve, have also drawn up agreements to lend their own currency to other central banks, thus making it possible to satisfy an increased demand for American dollars. In many quarters the circle of counterparties with access to the central banks' loan facilities has been extended.

The banks' demand for liquidity from central banks varies. Since October 2008, i.e. in the most acute phase of the crisis, demand has fallen in many quarters. This does not mean that the facilities no longer have a role to play. The fact that central banks the world over have declared themselves willing to continue to lend to banks to the extent necessary means that banks are willing to a certain extent to lend to each other.

A COORDINATED GUARANTEE PROGRAMME

Examples of other central government commitments are the borrowing guarantees that many governments are now offering banks. For a fee, central governments guarantee individual issues of certificates or bonds made by banks. In the EU guidelines have been agreed for these borrowing guarantees to ensure as standardised a form as possible. The agreement covers for example the scope of the programmes, pricing and maturities. The guarantees may only be given to solvent banks. The borrowing guarantees have a similar purpose to the central banks' increased lending, but are aimed at sustaining the more long-term market funding. They give the banks access to funds that can be used to satisfy the credit needs of the general public, but in a different way than the central bank lending. In many countries the authorities have also raised the ceiling for deposit guarantees and extended them to cover more types of accounts.

INJECTIONS OF CAPITAL

As the crisis continues attention is increasingly focused on the ability of the bank system to bear risk and absorb losses; in other words on the banks' capital (see the box Capital – regulatory capital under Basel II and economic capital). Despite the fact that banks currently meet the statutory capital adequacy requirements the market is hesitant to lend money to many banks and the banks to each other. This is because there is a perceived risk that future losses will wipe out the capital buffer. Thus the prevailing "liquidity problem" is basically due to concern about banks' solvency. As long as concern about banks' solvency remains, the banks' liquidity situation will also be under strain. Despite the fact that the central government measures are at present a necessary condition for financial stability, they are not sufficient to solve the financial crisis. This requires measures aimed at strengthening banks' solvency. It can be done in different ways, with measures aimed either at the asset side or the liability side of banks' balance sheets. For example the liability side could be strengthened by injecting capital or pressure on the asset side could be relieved by removing particularly risky assets. It is also possible to strengthen the balance sheet by reducing debt. Internationally measures are being undertaken aimed at all parts of the balance sheet.

Capital contributions

The most direct way of strengthening a bank's financial position is to contribute capital. Normally it is the business of the owners to increase the share capital by issuing new shares or other securities that can be included in the capital. In a situation in which the market is unwilling to contribute new capital, many central governments have decided to participate in banks' new issues of shares or long-term loans. In the USA the government has recently contributed capital to banks that fulfil certain conditions. In the EU agreement has been reached on general principles for government capital contributions.

In cases where the capital contribution is aimed at dealing with problems in individual banks, in general measures are also required to reorganise the bank. As has been mentioned, however, the programmes as a rule have a broader purpose than dealing with pure solvency problems. In many quarters the purpose of the programmes is described as bringing about a general strengthening of the banking system to promote continued lending in the country in question and prevent a serious credit squeeze on the national economy. In some cases the central government capital support has therefore been made conditional on the banks maintaining a certain level of household and corporate lending in their own country.

The balance between replenishment for the purpose of increasing resistance to losses and replenishment for the purpose of maintaining lending is, however, not simple. In a situation with seriously worsened economic prospects even well-capitalised banks may have an interest in obtaining a further buffer. Uncertainty as to the situation is also great and it is not possible to assess a bank's prospects with full reliability. One should also be aware that central government injections of capital also affect the conditions of competition. Less sound banks may be saved by

the injections of capital. To avoid unnecessary distortion of competition the state must make a careful analysis of the situation of the banks. The cost of the programmes should then reflect the risk, where a well-capitalised bank with good prospects should have access to more favourable funding than a higher risk bank.

An alternative way of strengthening the capital base is to reduce or refrain from dividends. At the same time such a measure may make it difficult to attract private capital contributions.

Measures on the asset side

Internationally there are several different programmes for dealing with the problem of troubled assets. As in the case of capital contributions there are measures both aimed at dealing with acute solvency problems in an individual bank and measures aimed at bringing about a general reduction of uncertainty in the market. The programme for purchasing difficult-to-value assets, the Troubled Assets Relief Program (TARP), implemented in the USA already during the autumn can be mentioned here. In the Netherlands too the government has bought bad assets from the banks, mainly from one bank with serious problems. Another example is the British programme to insure banks against losses on difficult-to-value assets.

Buying or insuring troubled assets may be a way to rapidly improve capital adequacy for banks with problems. Provided that the central government balance sheet is not burdened too much by the increased risk, the cost of such an operation can be kept reasonably low. The operation quite simply moves risk from agents paying a high price for liquidity risk to an agent whose risk premium is low.

This type of measure is, however, associated with a number of problems and difficult decisions as to selection, valuation and pricing, as well as management of the assets bought or otherwise taken care of by the government. It also raises important questions of principle, such as how to achieve an appropriate incentive structure and a reasonable distribution of risks, costs and possible future positive outcomes between the state and private owners. It is important to ensure that taxpayers do not take over the cost of losses already made. It is also important that as much of the uncertainty as possible is removed so that recovery is not delayed.

Debt relief

A third way of improving capital adequacy is for the creditors to write off the bank's debt. This is a measure associated with banks with very serious problems, where debt relief may be the only alternative to outright bankruptcy. The possibility of achieving debt relief for a bank that continues to operate differs from country to country. It may be done compulsorily only in some form of regulated reorganisation. This generally requires that a considerable reduction in the capital be made first by the owners and that a majority of the creditors agree to the reorganisation. Voluntary debt relief is of course also possible. In previous crises renegotiation of debt has often been a common element. In a few cases this has also been discussed in the

present crisis. In many countries, however, politicians have signalled that they intend to deal with problems threatening financial stability before they become serious enough for debt relief to be under consideration.¹³³

The importance of accounting

Something should also be said on the importance of accounting in this context. Since the carrying amounts of the assets affect capital adequacy, they also affect the picture of how well the bank is fulfilling the statutory capital adequacy requirements. Consequently, the accounting rules affect the bank's legal solvency or equity/assets ratio, and thus the bank's possibilities of continuing to operate. According to international agreements, assets on banks' balance sheets must be disclosed in accordance with the "fair value" principle. This means that the market price largely determines the value at which an asset is recognised. When the markets for certain assets no longer function as they should – if they exist at all – it will be difficult to apply such an accounting method. Last autumn some possibilities were introduced to deviate from this principle. For example, it was allowed to reclassify some financial assets from "held for trading" or "financial assets that can be sold" to the category "held to maturity". This means that certain assets can be measured at cost of acquisition instead of at fair value. Further relaxations of the "fair value" principle are currently being considered. It is true that this means greater flexibility to use other valuation principles than market price. But at the same time too great flexibility can increase the risk that banks or government agencies will be tempted to manipulate the valuation of assets to make a bank look healthier than it really is. Consequently it will be more difficult to determine the risks the banks are actually bearing in their asset portfolios. If the market feels a lack of reliance on the valuations reported it will also be more difficult to achieve a return of confidence. The risk of a Japanese scenario, in which recovery takes longer than necessary, thus increases. It is therefore particularly important that the accounting is as transparent as possible, with a standardised application in all countries, and that the values disclosed are as close to the market values of the assets as possible.

Concluding remarks

At present, the world is experiencing a financial and macro economy crisis regarded by many people as the deepest since the 1930s. What started as a liquidity crisis in the financial markets has increasingly assumed the character of a solvency crisis. This means an increased focus on banks' loan losses and their ability to absorb them.

The crises we describe in the article show that financial crises normally last for up to three years and can result in problem loans for the banks in the order of ten to 30 per cent of lending. History shows, however, that the length and extent of financial crises depends on many factors. The crisis legislation in place, volume of loans in foreign currency, choice of exchange rate regime, willingness of lenders to renegotiate loan agreements and the

¹³³ European Council statement.

actions of the authorities are examples of such factors. A strong international economy has often helped in national and regional crises.

The present crisis has affected more countries, markets, assets and agents than ever before. Its global nature and the global recession mean that the situation now is more worrying than in many previous crises. It is even more worrying, bearing in mind the protectionist tendencies that have become increasingly apparent recently, which are an effect of the crisis. These tendencies may contribute to a further deterioration in the outlook for the future.

An important factor for succeeding in bringing about a return of confidence in financial markets is how problems in the banks' balance sheets are dealt with. This applies not least to creating a credible floor for losses. In this, the determination and degree of transparency of the authorities' actions will often be crucial. In Uruguay the authorities' actions contributed to the rapid return of investors' confidence and the recession was therefore relatively short-lived. On the other hand, in Japan for example, uncertainty as to the banks' actual losses dragged on, making the crisis more protracted. This indicates how important it is that measures now taken by the authorities also promote transparency as to where the risks are. The dense and complex structure created in the financial system certainly makes this more difficult than in the Swedish financial crisis of the 1990s. But at the same time experience shows that attempts to gloss over the problems, for example by relaxing accounting rules, hardly constitute an effective method of crisis solution.

One of the most crucial factors behind the relatively successful management of the Swedish banking crisis of the 1990s was that there was political consensus over the need for extensive measures. There was a general awareness of the seriousness of the situation that made a concerted effort possible. In Uruguay too, unlike Argentina, there was political consensus that contributed to a rapid recovery of the economy. We can note that the present crisis awareness of government authorities worldwide is great. Vigorous and often coordinated measures have been taken to alleviate the crisis. The global nature of the crisis makes such cross-border coordination central. Readiness to take further measures if necessary is also great. But the authorities' measures can also affect the risk behaviour of financial market participants in the long term. This is a matter that should not be disregarded now when the financial regulatory framework is being modified.

It is difficult to say how long it will be before the measures already taken reach their full effect. It cannot be ruled out that the recession will deepen and loan losses grow before the economy finally picks up. For a return of confidence in the financial markets the problems burdening the banks' balance sheets must be brought into the light. This may contribute to a faster recovery of the real economy.

■ Articles in previous stability reports

■ 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.

■ 2007:1

Effects of increased foreign ownership in the bank sector

The Riksbank assesses the consequences for financial stability of a foreign owner buying up a Swedish bank. The conclusion is that increased foreign presence is positive for financial stability. It may also be positive for competition in the bank sector. On the other hand, it puts greater demands on the authorities in the countries concerned to cooperate on issues concerning supervision and crisis management.

Read more about previous articles at www.riksbank.se

Glossary

Arbitrage: Use of differences between prices or rules in different markets or business areas to gain from them.

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 adequacy rules: Rules concerning the minimum level of bank capital. See Basel II.

Capital base: The capital available to cover losses of a bank or an institution.

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.

Continuous Linked Settlement (CLS): An international system for the settlement of currency transactions.

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 line: A credit agreement which a bank or other financial institution makes with a company or other institution, usually in return for a fee. The credit is to be available at short notice and not be subject to terms whereby the money is not forthcoming. Interest is paid on the utilized part of the credit; the unutilized part is dormant but available when needed.

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.

Deposit guarantee: Insurance on funds deposited in affiliated credit institutions. If the credit institution collapses, the funds are returned to the depositor, usually up to a specified amount.

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.

Fair value accounting: Market-value accounting of traded as well as non-traded assets and liabilities. The practice is not yet implemented in full, for instance for banks; many non-traded assets and liabilities are still not included.

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.

Hedge fund: A collective term for various types of fund with a wider choice of investments than ordinary funds. They may, for example, pledge large parts of the portfolio as loan collateral and invest large parts in particular securities, besides hedging with forward contracts and options to even out the risk. They may also engage in short selling, i.e. sell shares they do not own.

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 securities (MBS): A variant of securitisation whereby the return on the security is secured by interest payments from a portfolio of several different 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.

New issue: An offer of new shares by a limited company, which thereby strengthens its restricted equity.

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 market: The area of the market in which repo transactions are carried out.

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.

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.

Settlement risk: The risk of any of the parties involved in the final settlement of debt not being able to perform their commitments.

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.

SWIFT (Society for Worldwide Interbank Financial Telecommunication): A message system used worldwide by financial market participants.

Transaction cost: Costs associated with trading in addition to the purchase price; for example finding a buyer/seller, negotiations, legal costs, etc.

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.

