Financial Stability Report 2007:1

24 May 2007

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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 26 April and 10 May. The Report uses data available as at 10 May.

Stockholm, May 2007

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 State 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 the central components of the financial system. At the same time, banking has a number of special characteristics. The banks borrow from each other, so problems in one bank may easily spread to other banks. 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 have a dominant position, with a combined market share of around 80 per cent. Besides the systemically important 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 supervision.

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.

Another aspect involves upholding a proper readiness for crises. The Riksbank is the authority that is in a position to provide emergency liquidity assistance if problems are so grave that the entire system is threatened. If an institution encounters serious problems, the Riksbank must take steps to minimise the negative consequences.

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

The Riksbank considers that financial stability is sound. The profitability of the Swedish banks has continued to rise and everything points to them being in a good position to cope with unexpected negative events. At the same time there are a number of risks that in time, in a weaker economic situation, can disturb stability.

The Riksbank perceives a risk of considerable price adjustments in a number of asset markets, including those for credit and for commercial real estate. The historically low risk premia may be an indication that investors have not required adequate compensation for risk, so that rapid selling may occur in the event of financial turbulence.

Another risk lies in developments in the Baltic states, in particular Latvia but also Estonia and Lithuania. Signs of economic overheating there are becoming increasingly clear. Meanwhile, operations in the Baltic states are generating a growing share of profits for Swedbank and SEB, the banks with the largest operations in these countries. The Riksbank's stress tests show that at present the banks have comfortable margins for coping with a deterioration in credit quality among borrowers in the Baltic markets. However, the tests also confirm that the banks have become more vulnerable to such a development.

Yet another risk concerns house prices and household debt; the latter is continuing to grow at a considerably higher rate than household income. In the long run this development is unsustainable.

Risks and threats to financial stability can arise in various ways. Imbalances that affect stability can be generated by real economic and financial market developments. Problems can also arise directly in the banks, which together play a crucial role for financial stability. Monitoring borrowers is an important aspect of the analysis because credit risk is the largest type of risk that banks manage.

This summary begins with the Riksbank's assessment of financial stability and presents what the Bank considers to be the most probable scenario; a more detailed account is contained in the respective chapters. The Riksbank then highlights a number of risks that in time, in a weaker economic situation, could generate shocks to or imbalances in the financial system. The picture of risks is accompanied by stress tests that have been performed to judge how extreme events affect the banks' resilience. This is followed by a résumé of the Bank's latest evaluation of the financial infrastructure. The summary concludes with a brief presentation of the article that is included in this issue.

The risk propensity of investors continues to be strong and this has contributed to persistently low risk premia. Credit spreads (the difference between high- and low-risk bond rates) remain narrow. The continuation of low risk premia could be due to investors moving to assets with a greater risk in order to obtain a higher yield without demanding the compensation for risk that is normally the case.

Risk propensities are likely to weaken when economic activity becomes more subdued. The question is how extensive those price adjustments will be and how abrupt the price movements. There is also uncertainty about the credit market's greatly increased use of derivative instruments for spreading credit risk. These instruments are positive for financial stability because they lessen the concentration of credit risk to individual participants. But the credit derivatives market has not been tested in a more constrained economic situation.

Most things suggest that prices will be adjusted in orderly forms. In recent years financial markets have managed to cope with problems without any serious crisis. On the other hand, that has been achieved in a favourable economic situation with high market liquidity.

The signs of overheating in the Baltic states have become increasingly clear, particularly in Latvia but also in Estonia and Lithuania. Economic growth has been so strong that domestic capacity has been increasingly strained and inflation has gradually increased. Moreover, lending to the corporate and household sectors has expanded rapidly. At the same time, the Baltic states' fixed exchange rate system limit the scope for monetary policy. Lending is mainly denominated in euro and the borrowers' exchange risk will last until these countries join the monetary union. EMU membership has been postponed for all three countries. This development has a number of features in common with the situation in countries where financial crises have occurred. In all three Baltic states the banking system is dominated by two Swedish banks, SEB and Swedbank.

The growth of lending to the household sector in Sweden is continuing at a high rate and house prices are following the same pattern. The increases in house prices and debt are expected to remain relatively rapid in the fairly short run as a result of sustained income growth and rising employment. In time, weaker economic activity and higher interest rates are expected to subdue the growth of borrowing more and more. Some slowing of the increases in house prices and debt has, in fact, been noted. The Riksbank judges that households are in a good position to service their loans.

The strong expansion of corporate borrowing has also continued, though some slowdown was evident last autumn. An important

factor behind the high credit demand in recent years has been increased investment. Meanwhile, the corporate sector's debt-servicing ability is strong. In time, slacker economic activity and rising interest rates are expected to subdue the growth of corporate borrowing.

Prices and loan-to-value levels are rising for leveraged buyouts. There are many indications that a large proportion of new bank loans is used to finance acquisitions involving private equity investment companies. This lending is highly competitive, which has led to less stringent borrowing requirements and longer maturities. Taken together, this implies an increased risk in this segment of the capital market. However, the banks' total exposures to leveraged buyouts involving private equity investment companies are still limited.

Commercial property prices have continued to rise, accompanied by relatively unchanged rents and vacancies. This implies a lower required yield. The combination of a lower required yield and a rising risk-free interest rate indicates a smaller risk premium for commercial property. That is in line with developments in other asset markets.

The Riksbank questions the rationale behind the falling required yield in the property market. The outlook for future earnings is obscure. At present, it is the prospect of a relatively strong increase in employment in the coming year that points to higher earnings. Increased employment in office-intensive industries can reduce vacancies. To date, however, neither the strong economic growth nor the improvement in employment has had an appreciable impact on the level of rents. In the years ahead, the scope for rent increases will probably narrow as economic activity becomes more subdued.

The profitability of the major Swedish banks has continued to rise, mainly due to increased commission income in connection with higher stock-market turnover and prices. With the persistently strong expansion of lending, net interest income, the largest source of bank earnings, has grown despite continued pressure on lending margins. The ongoing improvement in bank sector profitability has helped to strengthen the banks' resilience to unexpected losses. Against this there are the increased risks associated with the expansion in Eastern Europe. Operations in this region are generating a growing share of profits, above all for SEB and Swedbank.

The banks are becoming increasingly dependent on income from commissions. Maintaining the level of profitability presupposes that stock-market development remains favourable. Maintaining the growth of net interest income calls for a continued expansion of lending. However, there are no signs that, given the Riksbank's forecasts, the development of economic activity will lead to markedly increased losses in the bank sector.

RISKS

There are a number of risks that in time could disturb financial stability. None of these risks are an immediate threat at present but if their unfavourable development were to continue, in a weaker economic situation the consequences could be considerable. The risks the Riksbank has identified are reviewed below. It should be stressed that this is a matter of risk scenarios, not what the Riksbank considers to be the most probable development.

- **There is a risk of substantial price adjustments in a number of asset markets.** The historically low risk premia may indicate that investors have not demanded adequate compensation for risk and may accordingly be prone rapidly to disinvest in the event of financial turbulence. This risk applies in a number of markets, including those for:

  - credit
  - commercial real estate and
  - leveraged buyouts.

- **Economic developments in the Baltic states, Latvia in particular, are liable to lead to loan losses.** Economic overheating can lead in time to borrowers in this region being affected to such an extent that they have debt-servicing problems. That in turn is liable to have effects on the earnings of Swedish banks that have operations in these countries.

- **If the increases in Swedish house prices and household debt continue to exceed household income's growth rate, there is a risk of imbalances.** If an adjustment occurs abruptly, the effects on the real economy could be considerable. For individual households, an excessive debt burden can lead to debt-servicing problems.

STRESS TESTS

Two stress tests have been performed to judge how less probable but entirely plausible developments could affect the banks' resilience. The results show how the credit risks in the banks' portfolios are affected in two scenarios. One starts from a marked loss of creditworthiness among Baltic borrowers. The other scenario tests how the banks stand up to a marked turn in the credit cycle, similar to that in 2000. Both these scenarios were tested in last autumn's Financial Stability Report. That makes it possible to compare how the resilience to developments of these types changed during 2006 compared with the previous year.

The results show that the banks have a buffer for coping with a markedly impaired creditworthiness among Baltic borrowers but that during 2006 this buffer became smaller. At the same time it should be noted that the stress tests indicate that the banks would still adequately cope with such a scenario. The result of the other stress test suggests that there has been some reinforcement of the banks' resilience to a turn in the credit cycle. The four major banks all cope with such a development, though the banks with a large proportion of corporate loans in their portfolios would be hit relatively more heavily.

ASSESSMENT OF THE FINANCIAL INFRASTRUCTURE

Oversight of the financial infrastructure is one aspect of the Bank's work on financial stability. Sweden's financial infrastructure is assessed annually by the Riksbank in relation to international recommendations. The 2006 assessment shows that Sweden's financial infrastructure maintains a good international standard. There are a number of minor weaknesses that need to be rectified but none of them constitute a threat to financial stability.

EFFECTS OF INCREASED FOREIGN OWNERSHIP OF BANKS

Each issue of the Financial Stability Report contains an article on a topical subject connected with financial stability. In this issue the Riksbank considers the financial stability effects of a Swedish bank being taken over by a foreign owner. The conclusion is that an increased foreign presence is probably positive for financial stability. It can also be positive for competition in the bank market. At the same time, it increases the need for authorities in the relevant countries to cooperate on issues to do with supervision and crisis management.

Financial markets

International economic activity has remained favourable. This has been manifested in strong corporate profits, rising equity prices and persistently narrow interest rate spreads. Meanwhile, long-term interest rates have remained low and contributed to a continued search for yields. This helps to explain the persistently low risk premia, above all in the credit market. There is therefore still a risk of abrupt price corrections and negative effects on liquidity in certain markets.

The Riksbank's stability assessment starts from the external factors – real economic and financial market developments – that are liable to affect banks and their borrowers. This chapter opens with an account of the Riksbank's real economic assessment.[1] Developments in financial markets are summed up next and the chapter concludes with a discussion of potential associated risks.

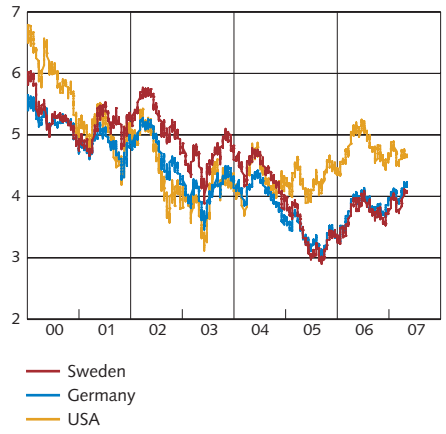
Economic conditions and financial markets

International economic development has remained strong. Growth rates have admittedly tended to slacken recently in many countries but are still relatively high. In the years ahead, the Riksbank foresees a more subdued phase for international economic activity. Global growth is expected to be almost 5 per cent in 2007 and then slacken to some extent in the following years. Growth has remained high in China and India, while the strength of activity in Japan is somewhat uncertain. Household demand in the United States is still robust, with no signs as yet of appreciable effects from the slowdown in the property market there.

In the euro area, economic development remains favourable. Growth has had a broad foundation geographically as well as by components of demand. The strong GDP growth in Germany continued last year, mainly due to high exports and rising investment. In the Baltic states, where some of the major Swedish banks have substantial operations, economic expansion has continued at a high rate. Annual GDP growth in Estonia and Latvia has been above 10 per cent in the past two years, while the rate in Lithuania has been not quite as high. With lower demand growth elsewhere and tighter fiscal and monetary policies, some future slackening of GDP growth is foreseen in the euro area and the Baltic states.

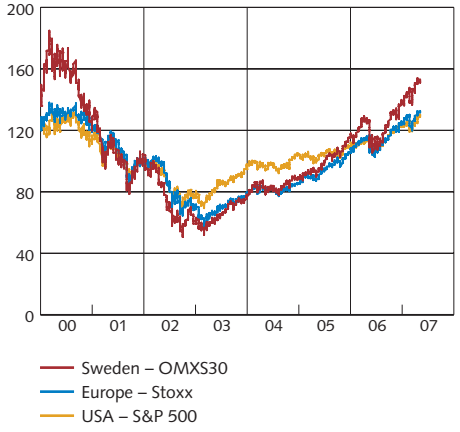
1 The account of real economic development in this Report is based on the Riksbank's Monetary Policy Report 2007:1.

Chart 1:1. Ten-year government bond rates
Per cent



Source: Reuters EcoWin

Chart 1:2. Stock markets
Index: 2 January 2002 = 100



Source: Reuters EcoWin

The strong international trend has left its mark in Sweden. Together with favourable productivity growth, the strength of external demand has led to comparatively high GDP growth in Sweden in recent years. For 2006 the annual GDP growth rate was 4.7 per cent. Looking ahead, growth in Sweden is expected to slacken as productivity gains and international growth fall back and monetary policy becomes less expansionary.

At the monetary policy meetings on 29 March and 3 May the Riksbank found that the picture of future prospects for economic activity and inflation is broadly unchanged.

INTEREST RATES

With the increasingly strong global economic activity, monetary policy has become less expansionary. Since the time of the December Report, policy rates have been raised by the Riksbank as well as by the Bank of Japan and the ECB. At the latest monetary policy meetings the Riksbank's assessment has been that a continued gradual increase in the policy rate will be required.

Long-term bond rates are still low. These rates declined at the beginning of 2007 but have risen again successively (see Chart 1:1). The fall in the winter mainly mirrored market expectations of a weaker macroeconomic development in the United States; this had mainly to do with the increased losses in the US house mortgage market from the turn of the year and concern about this spreading to other economic sectors (see the box on pp. 17–19). Moreover, the equity price fall in March contributed to the increased demand for government bonds (see below). During the spring, interest rates rose again as much of the published statistics exceeded market expectations.

The fact that long-term interest rates are still low could have to do with the structural changes in recent years in the global fixed-interest markets. The global level of saving has risen, for example, and rules have been changed for the instruments that are eligible for the portfolios of institutional investors. Moreover, the more open attitude of central banks may have reduced uncertainty about future monetary policy. This may explain why maturity premia have fallen globally in recent years, which has presumably affected the level of interest rates.

STOCK MARKETS

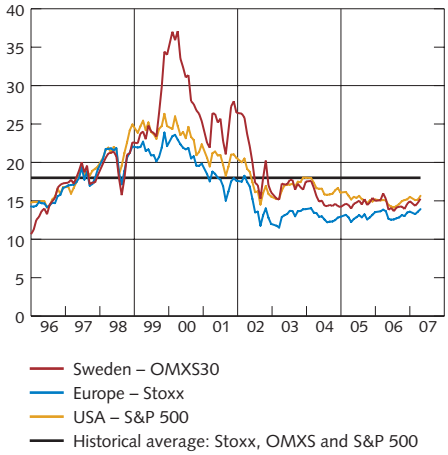
The strong economic situation and corporate profit growth have led to a continued increase in equity prices (see Chart 1:2). A temporary break in the trend did occur in the spring, when stock markets fell around the world. This break began in China when the Shanghai Exchange dropped sharply from an all-time high. Together with the increased uncertainty about the US economy, this led to a global stock-market fall. Markets have now recovered from their declines.

Equity prices have been driven, as previously, by profits that are high and above market expectations. Equity prices have been rising strongly since 2003, leading to all-time highs for many international exchanges in recent months. Prices are now close to the high levels from around the turn of the century. Compared with that period, however, the current development is being driven by more sectors, not just by IT-related enterprises. Moreover, valuations in terms of P/E ratios in recent years have been considerably lower than at that time (see Chart 1:3).[2] During 2006, profits for the 30 most-traded companies on the Stockholm Exchange (OMXS30) rose more than 18 per cent in annual terms. Future profit growth is expected to fall back to some extent as economic activity slackens.[3]

Market uncertainty, measured by implied volatility, about future stock-market developments has remained low. Volatility did rise to some extent in connection with the equity price fall early this spring, which is in keeping with some revaluation of risk, but implied volatility continues to be below the average level in the past ten years (see Chart 1:4).

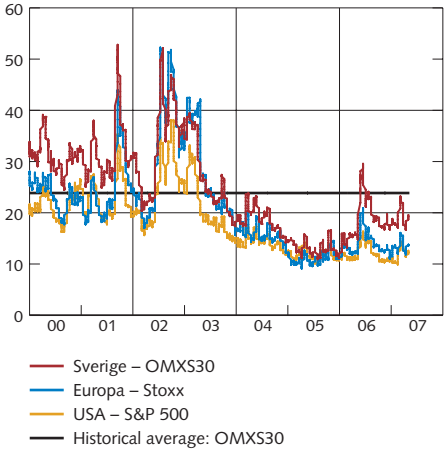
That volatility has been low for some time in stock markets as well as the fixed-interest market may have a number of explanations. One is that derivative trading, for example, has increased the possibilities of spreading risk. Moreover, the greater transparency of central banks may have reduced uncertainty about the future path of inflation. Cyclical factors probably also lie behind the low volatility. There is a negative historical correlation between corporate profits and volatility. To some extent, therefore, the low volatility can be due to the strong profits in recent years and expectations of a favourable future profit trend.[4] Another factor behind the low volatility may be the high risk propensity in recent years. As the business cycle moves into a quieter phase, these cyclical factors may well change so that volatility rises.

Chart 1:3. P/E ratios



Source: Reuters EcoWin

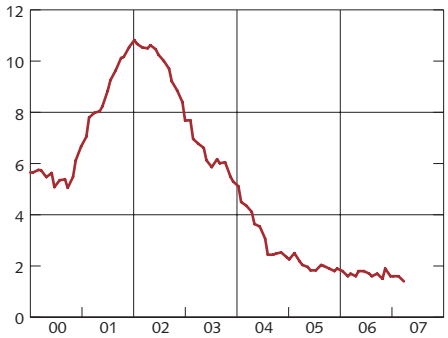
Chart 1:4. Implied stock-market volatility
Per cent



Note. The historical average is for the period January 1996–April 2007.

Source: Bloomberg

Chart 1:5. Global level of bankruptcies
Percentage of all companies rated Ba/BBB or lower

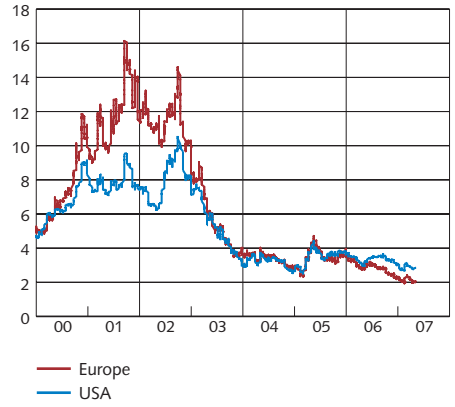


Note. Moody's/Standard & Poor's ratings. The chart is confined to firms graded Ba/BBB or lower because a majority of the number of defaults occurs in these categories.

Source: Reuters EcoWin

2 P/E ratios (price/earnings) relate the price of equity to the expected development of profit.
3 The SME database predicts that in 2007 and 2008 annual profit growth for the companies listed on OMXS 30 will be about 10 per cent.
4 The low volatility in recent years is discussed more fully in "The recent behaviour of financial market volatility", BIS Papers no. 29, August 2006.

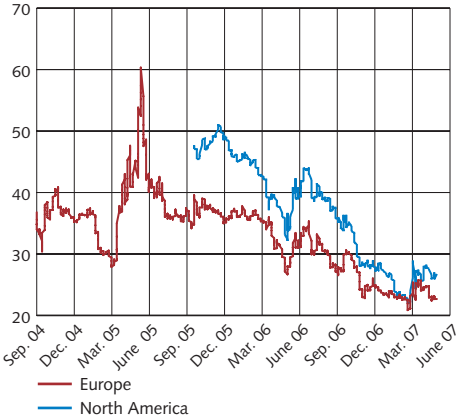
Chart 1:6. High-yield corporate bond spreads in Europe and the United States
Percentage points



Note. High yield is classified by Moody's/Standard & Poor's as Ba/BBB or lower.

Source: Reuters EcoWin

Chart 1:7. Premia in CDS indices
Basis points



Note. Indices for North America and Europe are represented by CDX and iTRAXX, respectively, in underlying 5-year bonds with an AAA credit rating.

Source: Bloomberg

CREDIT MARKET

Credit spreads (the difference between corporate and government bond rates) remain at low levels. To some extent the narrow spreads can be explained by the favourable economic climate, with a diminishing number of bankruptcies (see Chart 1:5). Expectations of a continuation of the strong profit trend and few bankruptcies have led in recent years to a successively lower required premium for investment in corporate bonds. The low long-term interest rates may also have encouraged investment in corporate bonds because they give a higher yield. The increased demand for these bonds may therefore also have contributed to their higher relative price.

Market participants do not foresee an imminent turn in the credit cycle, to judge from the low premia for credit derivatives. The general improvement in credit quality has led to falling premia for credit default swaps (CDS) in North America as well as Europe (see Chart 1:7). Premia for CDS issued on corporate bonds measure the credit risk in the underlying assets.[5] When financial market volatility tended to increase this spring, the premia became somewhat higher. An example is the premium for credit derivatives tied to securitised US subprime house mortgage loans, which rose relatively sharply when the quality of the underlying assets deteriorated (see the box on pp. 17–19). The movements in other credit markets were relatively slight, however, and premia are still relatively low.

5 For a fuller account of the market for credit derivatives, see the article "Trading activity in credit derivatives and implications for financial stability" in Financial Stability Report 2006:2. Sveriges Riksbank, and a speech by Deputy Riksbank Governor Lars Nyberg, "Credit derivatives – risks and opportunities", March 13, 2007.

Payment problems in the US subprime sector for housing finance

In recent months, debt-servicing problems among less creditworthy borrowers have been growing in the United States. As a result, a number of US institutions for housing finance have defaulted and risk premia for financial instruments connected with this market have risen markedly. The US market for housing finance has therefore been a source of concern in financial markets around the world.

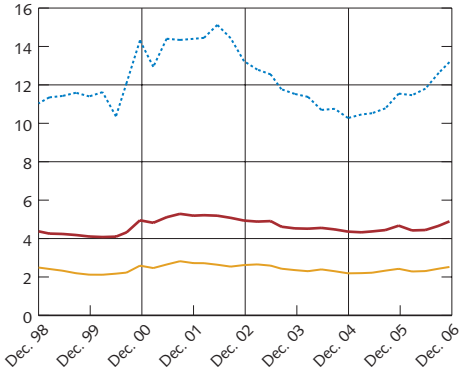
This box outlines developments in the US subprime market for housing finance, which is the market for house mortgage loans with a relatively high credit risk. This market segment has developed rapidly in the United States in recent years and has recently been attracting international attention.[6] The box concludes with a discussion of the equivalent market in Sweden and whether there is a risk of the same problems occurring here.

A subprime loan is a broad concept. In principle it covers all housing finance customers with a credit record that does not qualify them for conventional (prime) house mortgage loans, for which the formal requirements are very strict. The debt-servicing ability of households in the subprime segment varies from strong to weak. Subprime loans make up approximately 13 per cent of the total US stock of house mortgage loans.

The US market for subprime housing finance for households with a low credit rating has expanded rapidly in recent years. Loans of this type have provided access to the housing market for households that have a record of non-payment and a low or undocumented income. From 1996 to 2005 the stock of loans to this group quintupled; in 2006 the share of new lending was as much as 20 per cent.

Competition between housing finance institutions has increased markedly; in a bid for increased volume, margins on lending rates have been lowered and collateral requirements have been eased. Moreover, housing loans from mortgage institutions are often mediated by agents in return for a fee.

Chart B1. Households with payment problems in the US house mortgage market
Per cent, seasonally adjusted



Note. Percentage of loans for which payment is at least 30 days overdue.

Source: Mortgage Bankers Association

While lending to the subprime sector was rising most strongly, the US Federal Reserve raised its policy rate from 1 to 5.25 per cent. Many households have been affected by the higher policy rate, particularly those in the subprime sector with narrower margins. The interest rate on a large proportion of subprime loans is low for the first two years, after which the rate is adjusted to the current market level plus a mark-up to compensate the credit institution for the high credit risk up to maturity. The rising policy rate has entailed a sharp increase in this interest rate. Approximately half of subprime house mortgage loans have a variable interest rate and it it primarily these borrowers who have experienced problems in meeting loan costs.

In addition, the US house price slowdown last autumn weakened the development of borrowers' wealth. This led to a poorer position for transferring loans to another institution when the time came for an adjustment to the higher market rates or to sell the house in order to repay the loan. All in all, the proportion of households in the subprime sector that have debt-servicing problems has grown in two years from approximately 10 per cent to 13 per cent (see Chart B1). There has also been some

6 The risks associated with the subprime market for housing finance have been discussed in many fora over the past year. See e.g. "Housing finance in the global financial market", BIS CGFS Papers No. 26, January 2006.

Chart B2. Premia for credit derivatives on US house mortgage loans
Basis points

Note. Loans classified as BBB–.

Source: JP Morgan

increase, albeit a marginal one, in such problems among American households with prime loans.

Securitisation of subprime loans may have contributed to poorer credit assessments and monitoring. House mortgage loans in the United States are commonly securitised and sold in the market in different risk categories (tranches). Investors can then select just the yield and risk profile they are looking for. However, this process is managed, not by the mortgage institutions themselves but by investment banks and brokers. The selling process with a series of intermediaries entails less transparency in the underlying assets, which may have caused investors to underestimate the credit risks.

A number of US lending institutions that specialised in subprime have gone bankrupt. Securitising house mortgage loans enables the lender to spread the credit risk to other participants, leaving more room for additions to its own loan portfolio. The securitisation agreements do, however, include provisions whereby the credit risk reverts to the mortgage institution in certain circumstances. The most common case is an early payment default, when the borrower suspends payment shortly after the loan has been granted. The purpose of such provisions is precisely to give the mortgage institution an incentive to check the credit quality of its borrowers. When the problems in the subprime market grew during 2006, however, these provisions contributed to loan losses in many institutions as the credit risk reverted. A number of companies defaulted. One was the second largest company in the market, New Century Financial, which failed in February 2007. Moreover, one of the largest European banks, HSBC, had to make unexpectedly large provisions on account of operations connected with subprime institutions. As a result of these developments, many commercial banks have introduced more stringent requirements for collateral for new loans.[7] Furthermore, the share of new borrowing that occurs in the subprime market has become considerably smaller in recent months.

The problems in the subprime sector have increased the cost of hedging losses. Between January and mid February this year the premium on credit derivatives linked to securitised subprime housing loans rose from 5 to 20 percentage points (see Chart B2).[8] The generally strong risk propensity of investors contributed to unduly low premia for high-risk tranches, premia that did not represent reasonable compensation for risk.

There are, however, no indications that these developments represent a risk for financial stability. The debt-servicing ability of US households remains generally good and the balance sheets of the financial institutions are strong. Even with a relatively marked deterioration of credit quality in this sector, loan losses in the total house mortgage market would be very limited. Moreover, securitisation means that a large part of the credit risks associated with these loans is transferred out of the house mortgage institutions. But there may be a risk

7 In the Federal Reserve's Senior Loan Officer Opinion Survey in January, approximately 15 per cent of the banks stated that credit terms had been tightened in the past three months, which is the highest figure in these surveys since the beginning of the 1990s.

8 This index (ABX Home Equity) is a credit derivative index for a portfolio of securitised US housing finance loans in different risk classes.

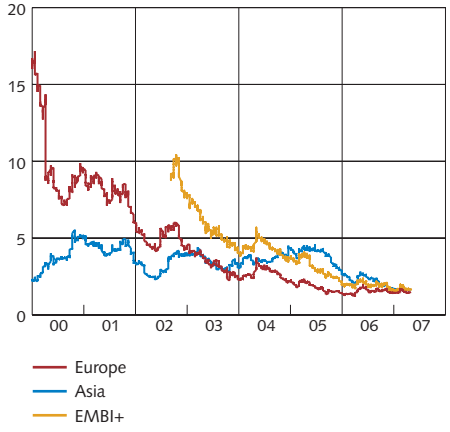
of the impaired credit quality and the rapid adjustment of premia having effects on the pricing of other risk-carrying instruments. To date, however, there have been no such effects of any importance.

The Swedish equivalent of US subprime

In Sweden, loans to households that would be classified as subprime in the United States are very marginal in relation to the total stock of house mortgage loans. The Riksbank estimates that in Sweden the share is currently less than 0.5 per cent, which is appreciably smaller than in the United States. This is largely due to structural differences between these countries' markets for housing finance. Firstly, credit processes differ to some extent. Lenders in Sweden focus primarily on borrowers' debt-servicing ability. The quality of information about borrowers is generally higher in Sweden, which benefits credit assessments and reduces the uncertainty in risk assessments of potential borrowers. Neither is it particularly common for credit assessments to be undertaken in part by agents in return for a fee. Secondly, there is virtually no securitisation of the type that dominates the US market and for what does exist, the average quality of the underlying assets is high. House mortgage loans in Sweden are traditionally financed by issuing bonds backed by the institution's total assets. Thirdly, there are differences in the range of products. Loans with negative repayment, where the whole or a part of accrued annual interest is added to the debt, hardly occur at all in Sweden (an exception is a type of house mortgage loan to elderly persons; see the box on pp. 32–33). Neither does Sweden have the kind of loan described earlier, where an initially low interest rate is raised after a couple of years to compensate for the low initial level as well as for an above-average credit risk.

The Riksbank considers that the risk of Sweden having debt-servicing problems similar to those in the US market is currently very low. As the credit market develops, subprime lending will probably grow, as a share of the market as well as in absolute terms. Product development has been weak in Sweden, so that would be basically positive. Many households with a reasonably sound debt-servicing ability have had difficulty in obtaining loans if they do not fulfil the formal criteria. A competitive supply of products does not necessarily entail sub-standard institutional lending routines.

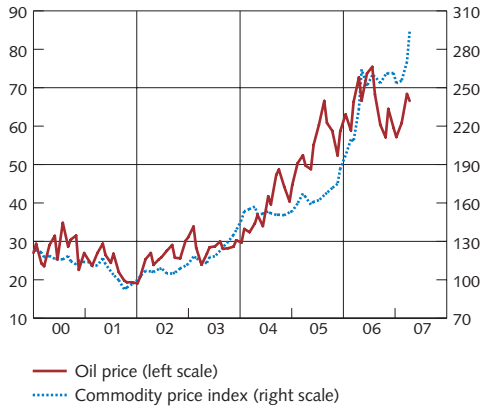
Chart 1:8. Credit spreads for bonds issued by emerging-market economies
Percentage points



Note. The countries in EMBI+ are graded Baa1/BBB+ or lower by Moody's/Standard & Poor's.

Source: Bloomberg

Chart 1:9. Oil price and commodity price index
USD per barrel and index: January 2002=100



Note. The commodity price index comprises food products (57 per cent), metals (28 per cent) and agricultural products excl. food (15 per cent).

Sources: Reuters EcoWin and The Economist

Wider credit spreads are foreseen when global economic activity moves to a quieter phase. Wider spreads are a natural consequence of an expected increase in the number of corporate defaults when corporate profits weaken. The models used by credit institutions on the basis of their expectations of future economic development indicate that this turn in the credit cycle will occur towards the end of 2007.[9] However, corporate balance sheets are generally strong and just a moderate increase in the number of defaults is expected in the near future.

The spreads for bonds issued by emerging-market economies remain historically low (see Chart 1:8). These low bond rates can be motivated by the continued improvement in the creditworthiness of many of these countries. Stronger government finances and growing current-account surpluses have recently led credit-rating institutions to upgrade many emerging-market economies.[10] The low spreads also mirror investors' increased demand for bonds with a risk and a yield that are higher than those of government bonds.

COMMODITY MARKETS

Prices for oil and other commodities have been sustained by persistently strong global demand. After the barrel price of crude oil had reached a nominal high around USD 75 last summer, there was some fallback during the winter, partly due to a relatively large supply. During the spring the geopolitical concern about Iran created some uncertainty about the supply of oil and this contributed to the price rising again. For other commodities it is the persistently strong global demand, above all in Asia, that has helped to keep prices up (see Chart 1:9).

From a macroeconomic perspective, commodity markets are of interest because they affect both the real economy and inflation. In addition, financial stability may be affected more directly because commodities are a growing item in investors' portfolios.

9 See e.g. Standard & Poors, "Global Bond Markets' Weakest Links and Monthly Default Rates", May 2007.
10 See e.g. Standard & Poor's, "Global Corporate & Sovereign Rating Actions: First Quarter 2007".

Risks in financial markets

Risk premia are historically low in a number of financial markets, particularly the market for credit risk. A number of related changes suggest that risk premia today should perhaps be somewhat below the historical level. New markets have arisen, for example, for spreading risk, as well as new financial instruments. It is debatable, however, whether the structural changes fully explain the low risk premia.

A long period of strong economic and financial conditions has encouraged investors to turn to new assets with a higher risk. This has been accompanied by an increased supply of assets that are more complex as well as of assets with a higher credit risk. The number of leveraged buyouts by private equity investment companies has risen in Sweden as well as in the rest of Europe and the United States. The transaction prices have gone up and up, as have loan-to-value levels, which all else equal implies a higher risk. But credit spreads, which to some extent indicate expectations of future losses, do not seem to mirror this.

Markets for spreading credit risk have expanded rapidly and vulnerability to abrupt price corrections has increased. The channels for inter-market contagion have become more numerous as many investors, including hedge funds, are simultaneously active in several financial markets.[11] Hedge funds in particular have an important role in the growing market for credit derivatives. Their presence tends to improve price setting and liquidity, and the greater possibilities of spreading risk are normally an advantage for stability.[12] At the same time, several of these instruments have not been tested under less favourable economic conditions. If a number of hedge funds were to incur large losses and also have large liabilities, there could be a simultaneous and appreciable reduction of liqudity in several markets. All in all, these developments may have made the financial system less vulnerable to comparatively small, isolated shocks but more so to larger, more far-reaching shocks.

Corrections to risk premia are liable to be abrupt if investors' required compensation for risk has been unduly low. If that is the case, a slackening of economic activity could lead to a marked correction of prices for corporate bonds and credit derivatives. Many

11 For a fuller discussion of hedge funds, see the article "Hedge funds and the financial system" in Financial Stability Report 2006:1, Sveriges Riksbank.

12 For a more detailed account of the credit derivatives market, see the article "Trading activity in credit derivatives and implications for financial stability" in Financial Stability Report 2006:2, Sveriges Riksbank, and a speech by Deputy Riksbank Governor Lars Nyberg, "Credit derivatives: risks and opportunities", March 13, 2007.

investors may then want to sell their holdings simultaneously in favour of assets with a lower risk. That would generate additional turbulence and result in decreased liquidity and greatly increased volatility in certain markets. The comparatively abrupt price fall for certain assets, for example equity, in February and March illustrates market sensitivity to increased economic uncertainty. Moreover, the problems in the US subprime market provide an indication of how quickly credit quality can deteriorate, although to date this has involved just a relatively isolated segment of the credit market (see the box on pp. 17–19).

Although there have been disruptions in individual markets, in recent years financial markets in general have displayed firm resilience. The sudden collapse of the hedge fund Amaranth in the autumn of 2006 is one example. Another is the downgrading of Ford and GM in the spring of 2005. Market reactions were comparatively slight in both cases and there was just a very limited spread to other markets. But these events did occur when economic and financial conditions were sound.

However, Sweden's financial system is not likely to be affected by abrupt price corrections to such an extent that the banks have problems with solvency. Rapidly rising interest rates and interest-rate spreads could reduce the value of the banks' bond portfolios. Moreover, decreased liquidity in certain market segments could increase the costs of the banks' market borrowing. At present, however, the banks' market risks are relatively low (see Chapter 3) and earnings as well as solvency are very strong.

Summary

- Credit risk premia continue to be low. So there is still a risk of abrupt price corrections in financial markets. To a large extent, the forms they will take depend on cyclical and financial conditions.

- Abrupt price adjustments would, however, be unlikely to affect Sweden's financial system on such a scale that banks have problems with solvency. But the value of the banks' bond portfolios could decrease and there is a risk of an increase in their borrowing costs.

- Economic developments in the Baltic states, above all Latvia, constitute a risk for Swedish banks with considerable operations in this region. The signs of overheating are becoming increasingly clear and a markedly weaker economic development would have consequences also for the Swedish banks.

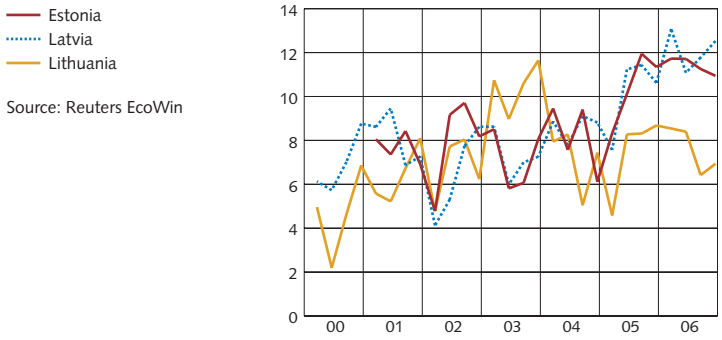
Overheating in the Baltic countries?

The Baltic economies have experienced strong expansion in recent years. A large part of this expansion can be explained by the countries having adapted to new economic conditions. During such an adjustment, high rates of increase in GDP as well as in inflation and lending need not lead to problems. However, studies indicate that even allowing for this catching-up effect, credit growth is unsustainably high.[13] Neither can one disregard the fact that these developments have some elements in common with those in many of the countries that have suffered financial crises. The signs of overheating are clearest in Latvia, but similar tendencies are evident in Estonia and Lithuania.

Two of the largest Swedish banks, Swedbank and SEB, have extensive operations in the Baltic countries. If developments were to lead to poorer credit quality among Baltic borrowers, the Swedish banks could therefore incur significant losses.

Over the past two years annual GDP growth has averaged more than 10 per cent in Estonia and Latvia (see Chart B3). GDP growth in Lithuania has been somewhat more modest, with rates around 7 per cent. Since the transition to a market economy in the 1990s, growth in the Baltic countries has been rapid. Productivity growth has been well above the EU average in the past decade, although the improvement did start from relatively low levels. The robust expansion in recent years has mainly been driven by strong domestic demand. This has strained resources. Favourable future prospects have contributed to strong growth in household consumption and corporate investment. However, investment has been concentrated to the services and property sectors, not to building up production capacity. The export sector has therefore developed less strongly in the last few years.

Chart B3. GDP growth
Percentage annual rate



Source: Reuters EcoWin

With strong domestic demand and declining exports in the past year, current-acount deficits have risen markedly. For the second half of 2006, the current-account deficits were equivalent to 25 per cent for Latvia, 14 per cent for Estonia and 12 per cent of GDP for Lithuania (see Chart B4). Previously, around 75 per cent of the deficit was financed by foreign direct investment. In recent years, this share has shrunk to around 40 per cent. The savings deficits have been financed instead with loans in foreign currency.

The high economic growth has generated strong labour demand. As a result, unemployment has fallen. However, structural unemployment has remained relatively high in certain sectors, though in Estonia it has fallen in recent years. The problems have been aggravated by a rising incidence of labour emigration to other EU countries. The strained situation in the labour market has pushed wages up. Productivity growth has been high but wage increases have been even higher.

The combination of high resource utilisation, high wage increases and rising energy prices has led to high inflation. In Latvia and Estonia, inflation has been relatively constant in the past

13 See, for example, Kiss, G. Nagy, M. and Vonnak, B., "Credit growth in Central and Eastern Europe: trend, cycle or boom", MNB Working paper, October 2006, and Boissay, F., Calvo-Gonzalez, O. and Kózluk, T. 2006. "Is Lending in Central and Eastern Europe Developing too Fast?" Paper presented at the conference "Finance and Consumption Workshop: Consumption and Credit in Countries with Developing Credit Markets", Florence, 16-17 June 2006.

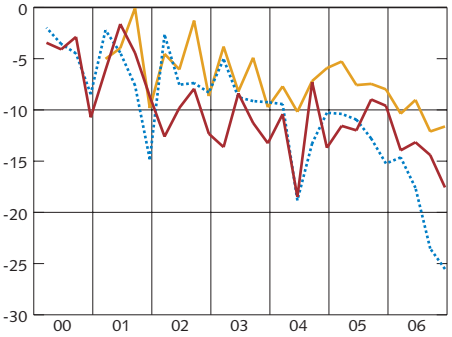
two years at around 7 per cent and 4.5 per cent, respectively; the rate in Lithuania has been more subdued and was not far from the Maastricht criteria at the most recent assessment in mid 2006 (see Chart B5).[14] In the past year, however, inflation in Lithuania has begun to rise.

All three countries have applied for EMU membership and are participating in the exchange rate mechanism, ERM II. Estonia and Lithuania have opted for a fixed exchange rate with the euro, using a currency board.[15] Latvia has chosen to maintain an exchange rate with the euro inside a band of ±1 per cent. In that inflation in the Baltic states has been above the euro average, the real exchange rates have appreciated successively.

In recent years, lending has risen strongly to both the corporate and the household sector. The combination of high inflation and low interest rates has resulted in a negative real interest rate in recent years (see Chart B6). During 2006, lending to the corporate sector in Estonia and Latvia rose at an average annual rate between 40 and 50 per cent and the corresponding figure for lending to households was around 70 per cent. However, the increases started from very low levels. Credit growth has been so strong that corporate loan stocks relative to GDP in Estonia and Latvia approached Swedish levels last year (see Chart B7). Household debt as a percentage of GDP is still some way below the level in Sweden (see Chart B8). But if GDP and debt continue to rise at the same rate as in 2006, this indicator of household debt in Latvia and Estonia will be at the Swedish level as early as next year. In Lithuania, the debt to GDP ratio has been lower than in the other Baltic countries for households as well as the corporate sector. Credit growth took off slightly later in Lithuania because the real interest rate has been relatively higher and GDP growth has been lower. A large proportion of household borrowing has been used to purchase property, which has led to sharply increased property prices in all three countries in recent years.

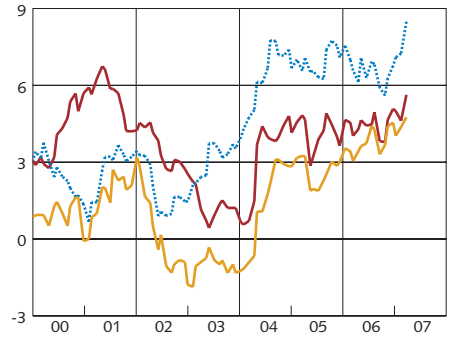
A majority of the banks in the Baltic states are Swedish owned and profitability in this region has been sound. Swedish banks entered the

Chart B4. Balance on current account
Per cent of GDP



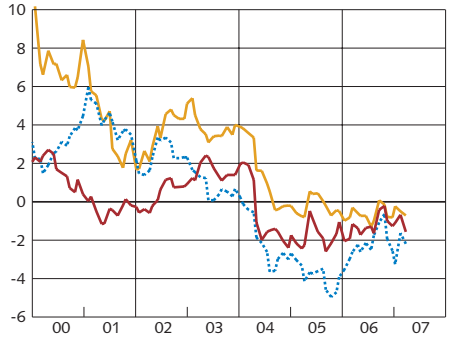
Source: Reuters EcoWin

Chart B5. HICP inflation
Percentage 12-month rate



Source: Eurostat

Chart B6. Real interbank interest rates
Per cent



Source: Reuters EcoWin

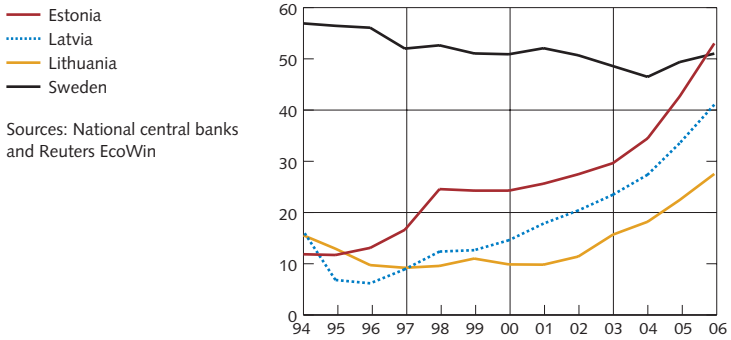
14 One of the criteria for entering monetary union is that during the year prior to the assessment, inflation in the applicant country should not have been more than 1.5 percentage points higher than in the three EU countries with the lowest inflation.

15 Estonia has had a currency board since 1992. Prior to 2000 the currency was pegged to the German mark; since then it has been pegged to the euro. Lithuania has had a currency board since 1994, pegged to the US dollar initially and since 2002 to the euro. In a currency board system, a country guarantees the value of its currency by holding the equivalent amount in the reference currency. In Estonia and Lithuania this means that the total amount of notes and coins in circulation is matched by the holding of euro in the foreign exchange reserve.

bank markets in all three countries at an early stage and have rapidly increased their market shares. Swedish banks, mainly Swedbank and SEB, to a lesser extent Nordea, account for between 55 and 90 per cent of lending in the region. The Baltic operations of Swedbank and SEB generate around 15 per cent of group operating profits. [16]

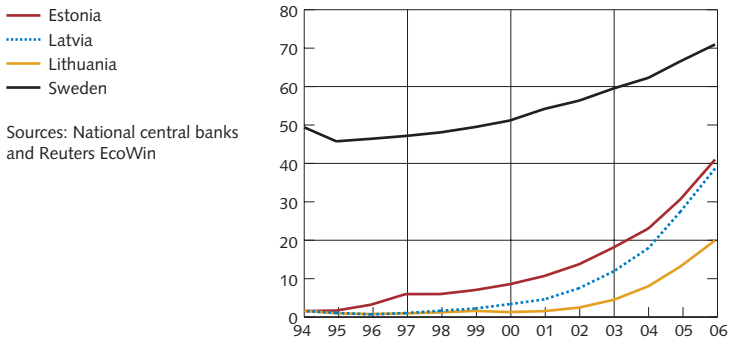
Most of the borrowing in the Baltic states is arranged in euro. This is partly because the euro area interest rate has been below the domestic level. At present the borrowers are exposed to exchange risk. The Baltic states plan to join the EMU relatively soon but the exchange risk will last until they actually do so.

Chart B7. Corporate loan stocks in the Baltic states and Sweden
Per cent of GDP



Sources: National central banks and Reuters EcoWin

Chart B8. Household sector loan stocks in the Baltic states and Sweden
Per cent of GDP



Sources: National central banks and Reuters EcoWin

Meanwhile, EMU membership has been postponed. Inflation has exceeded the convergence criterion. EMU membership would reduce the exchange risk for borrowers and the credit risks for banks but at present there is no set date for membership and this has created some market uncertainty. Market participants foresee membership for Estonia and Lithuania some time in 2010, while the situation for Latvia is more uncertain. The increases in GDP, inflation and the current-account deficit have been most marked in Latvia.

Early this year the uncertainty about economic developments in Latvia contributed to some turbulence. In February, Standard and Poor's downgraded Latvia's economic prospects, which weakened the domestic currency, the lat, though the band width of ±1 per cent was not exceeded. At the same time, the weaker currency obliged the central bank to act in the market and this led to a sharp increase in the short-term interbank rate, the Rigbor. The lat has stabilised since then but the Rigbor has remained at a higher level.

Monetary policy's potential for subduing demand and inflation in an overheated economy is very limited on account of the fixed exchange rate regimes in these countries. The central banks in Latvia and Estonia still tried to restrain credit growth by raising the reserve requirements for banks but the effect on lending was only moderate. Higher reserve requirements do not necessarily lead to lower lending because borrowers can turn to lending institutions that do not have the same requirements.

A tighter fiscal policy is required to achieve balanced economies. In recent years, fiscal policy has tended to fuel the expansion rather than subduing it. Among other things, the focus has been on raising public sector wages

16 On the basis of group results for 2006.

and reducing the general tax burden. At the beginning of March, however, the Latvian Government presented a plan for dealing with the tendencies to overheating and resultant inflation; the plan includes the goal of a balanced budget in 2008, refraining from further tax reductions while economic growth is high, and tax policy and reforms to slow the real estate market and restrain credit growth.

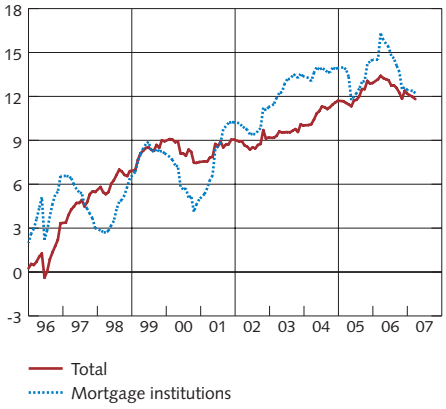
However, it is doubtful whether sufficient measures have yet been implemented to curb the strong domestic demand. In 2006, Estonia and Latvia had budget surpluses and Lithuania had a small deficit. The shaping of these countries' fiscal policies will play a crucial role for avoiding a further postponement of EMU membership.

The Swedish banks' borrowers

House prices and household debt have both continued to rise, though some slowdown has occurred. The Riksbank foresees a further increase in house prices in the near future, partly as a result of fiscal measures and expectations that employment will develop strongly. But in the long run a continued increase in house prices and household debt at these high rates is not sustainable. The growth of corporate borrowing also remains strong. At the same time, corporate sector productivity is sound and there are no indications of a future marked weakening. The price rise for commercial property has continued , however, accompanied by relatively little change in rents and vacancies.

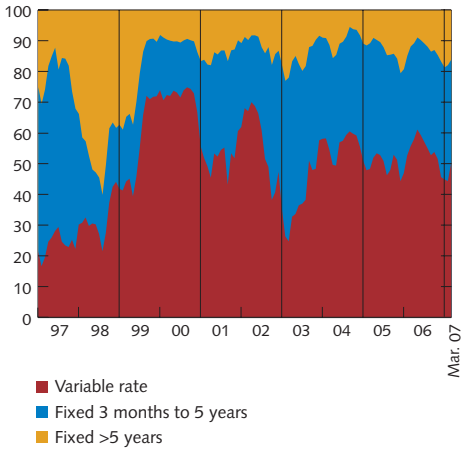
Monitoring developments for borrowers from Swedish banks is an important aspect of the analysis of stability because credit risk is much the largest type of risk to which banks are exposed. This chapter opens with a scrutiny of the household sector, which has 45 per cent of the stock of bank loans.[17] The corporate sector, with half of the loan stock, is analysed next. The real-estate sector is the single industry to which the banks are most exposed and is therefore considered separately. The commercial property market is also important on account of its significance for property companies. The emphasis in this chapter is on Swedish conditions but other markets where Swedish banks have substantial exposures are also assessed.

Chart 2:1. Household borrowing
Percentage 12-month change



Source: The Riksbank

Chart 2:2. Duration of fixed interest periods for new house mortgage loans
Per cent of new loan stock



Source: The Riksbank

The household sector in Sweden

To form a picture of risks in the household sector, matters covered in the analysis include the development of borrowing, households' debt and their debt-servicing ability.

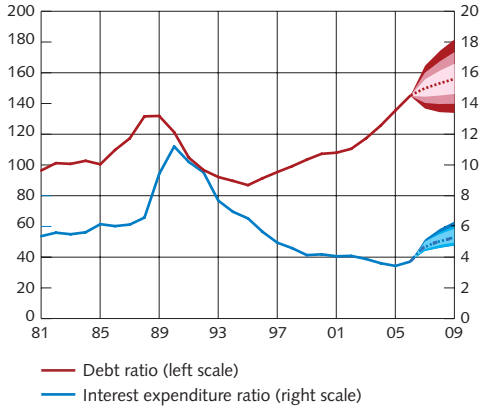
Household debt grew at a high rate during 2006. The increase was strongest in the early months and tended to slow in the second half-year. In March 2007 the rate in annual terms was almost 12 per cent, which is still very strong historically, only just short of the high of 13 per cent at the beginning of last year (see Chart 2:1). The loans have been obtained largely to finance house purchases. More than 85 per cent are secured with real estate. Mortgage institutions provide the greater part of the loans, while last mortgage loans from banks make up a minor share.

Many households choose a variable interest rate for new housing loans. In March, half of the new loans from mortgage institutions had a variable interest rate (see Chart 2:2).

The debt ratio and the interest expenditure ratio both rose during 2006. With the rapid increase in household debt, the amount of

17 At group level including operations abroad.

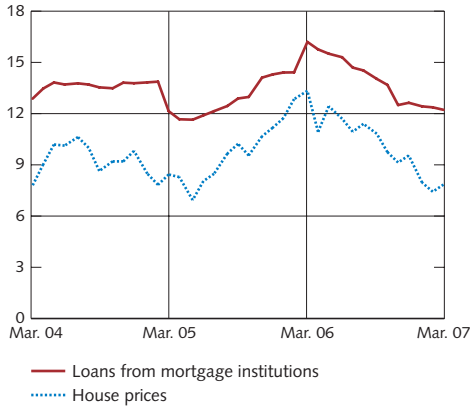
Chart 2:3. Household debt and post-tax interest expenditure in relation to disposable income. Per cent



Note. The uncertainty bands show the 50, 75 and 90 per cent probabilities of the household debt and interest expenditure ratios being within the respective range, given the Riksbank's main scenario in Monetary Policy Report 2007:1. They accordingly mirror the uncertainty about how household borrowing and interest expenditure are influenced by changes in interest rates and disposable income. The broken line represents the forecast in the main scenario.

Sources: Statistics Sweden and the Riksbank

Chart 2:4. House mortgage debt and house prices Percentage 12-month change



Note. House prices are represented here by the coefficient of house prices relative to assessed values.

Sources: Statistics Sweden and the Riksbank

debt has grown relative to disposable income; the debt ratio at end 2006 was 145 per cent. Together with rising interest rates, the strong expansion of debt has also contributed to the higher interest expenditure ratio (post-tax interest expenditure relative to disposable income). During 2006 the interest ratio rose from 3.4 to 3.6 per cent but is still historically very low (see Chart 2:3).

House prices also rose rapidly during 2006. The pattern was the same as for debt, with the strongest increase, over 13 per cent in annual terms, in March. There has been some slowdown since then but the rate is still historically high, around nine per cent in annual terms in the early months of 2007 (see Chart 2:4).

Analysing the development of prices for collectively-owned dwellings is more difficult because the statistical foundation is more uncertain. The types of object that are transacted in different periods cannot be checked. Still, prices for collectively-owned dwellings have very probably risen even faster than private house prices. The discussion concerning 1- and 2-family houses in this Report also applies in principle to collectively-owned dwellings.

In the relatively short run, the increases in house prices and household debt may remain relatively high. The probability of this has become stronger since the time of the December Report. Instead of continuing to slacken from the second half of 2006, the growth of lending to households seems to have stabilised in the early part of this year. Moreover, demand is favoured by the appreciable improvement in the labour market.

A further lowering of the property tax as of 2008 now seems to be assured.[18] This was announced in connection with the Spring Budget Bill. The Government proposal involves replacing the present tax with a municipal levy of up to SEK 4500, accompanied by an increase in the capital gains tax on housing from 20 to 30 per cent. In this way the reform is financed within the housing sector.

Although the abolition of the property tax is financed within the housing sector, it can still generate some upward pressure on house prices. The proposal is intended to lower monthly costs for all households whose annual property tax previously exceeded SEK 4500. A house buyer who focuses on the monthly outlay and disregards the taxation of any future capital gains can use the relief for the additional interest expenditure on a larger loan. If this larger borrowing potential were to affect house prices in full, the Riksbank calculates that, compared with the current rules, house prices would rise around five per cent. There is room here for sizeable

18 Earlier amendments to the property tax were proposed in the 2007 Budget Bill (2006/07:01) and introduced retroactively to apply as of 2006. They included a maximum tax of SEK 5000 on the assessed value of the land for 1- and 2-family houses.

regional differences, so the effect could be greater in areas with high assessed values (see Table 2:1). However, the calculation probably overestimates the impact on house prices. For one thing, it does not allow for the increased rate of capital gains tax when property is sold. For another, a property tax cut has been the government's explicit ambition for a long time and should have therefore already affected house prices. Thirdly, it is not yet clear whether the reform will last in its present guise. If households suspect that some kind of property tax increase will occur in the future, they may not be prepared to borrow more.

Table 2:1. Average price effects in selected counties SEK 1000s and per cent

	Average price	Assessed value	Price rise
Stockholm county	3068	1937	8 %
Kronoberg county	996	634	3 %
Skåne county	1796	1080	5 %
Västmanland county	1278	820	4 %
Norrbotten county	750	453	0 %
National average			5 %

Note. The calculation is based on the average of assessed values in each county in 2006. As assessed values for 2006 relate to the level of house prices in 2004, they are below 75 per cent of the market value (a property tax assessment is intended to represent 75 per cent of the market value). The size of total tax relief has been scaled down to bring it into line with the gross figure in the 2007 Spring Budget Bill. Basing the calculation on the average of assessed values in each county instead of on the distribution of all assessed values means that the price effect in a county may be either over- or under-estimated. The calculation of the national average price rise is weighted with the total value of 1- and 2-family houses in each county. The post-tax interest rate is assumed to be 3.5 per cent.

The impression that the housing market is still strong is confirmed by the house agents survey from SBAB (the Swedish Housing Finance Corporation) and SEB's house price indicator. House price increases are judged to continue in the coming years but they are likely to be somewhat below the recent periods' rates around 10 per cent. An increase at rather more than 5 per cent is more probable. Taken together, these factors suggest that the short-run growth of household debt may remain relatively rapid. In the Riksbank's main scenario,[19] the increases in the debt ratio and the interest expenditure ratio occur gradually (see Chart 2:3).

In the longer run, however, increases in house prices and household debt that greatly exceed the growth of disposable income are not sustainable. The increases in the past ten years have been of that nature: from 1996 to 2006 Statistics Sweden's house price index rose more than 130 per cent as against 45 per cent for disposable income. This cannot continue if households are to be able to service debt. In the longer run, debt and house prices can be expected to follow nominal economic growth fairly closely.

19 The Riksbank's main scenario is based on the forecasts for interest rates and disposable income in Monetary Policy Report 2007:1.

The main driving force behind the increase in house prices and debt in recent years has been the low interest rates. Mortgage rates have admittedly risen in the past year but not to the same extent as the risk-free interest rates because mortgage institutions have narrowed lending margins. The smaller margins may be due to the new capital adequacy rules (Basel II) from February this year, as well as to increased competition between mortgage institutions. The new capital adequacy rules imply lower costs for housing finance because this now requires less capital. Knowledge of the imminent rule change may have contributed to the reduction of house mortgage rates even before the rules came into force.

The offer of interest-only loans and higher loan-to-value levels may have contributed to the increased debt. With the possibility of higher mortgaging, down payments for house purchases can be smaller. Interest-only loans have become more frequent and this may be an additional reason why the increases in household debt and house prices have exceeded what real economic factors can explain (see the box on pp. 32–33).

Changes in house mortgage loan terms

The rapid increase in house prices and debt in recent years is mainly explained by low interest rates and the growth of household disposable income. Another explanation is that increased competition in the house mortgage market has led to depressed interest rate margins as well as to changes in loan terms, for instance as regards repayment and loan-to-value (LTV) levels.

The main changes in house mortgage loan terms are summarised in the following.

One important change is that creditors accept higher LTV levels than they used to. A larger mortgage reduces the size of the down payment for a house purchase. Today, mortgage loans are normally granted up to a level of 90 to 95 per cent. But if the borrower's financial situation is very strong, a number of lenders are prepared to allow mortgaging up to or above 100 per cent, subject to an assessment from case to case. Previously it was more or less mandatory for all borrowers to make a cash payment of at least 10 per cent. The possibility of mortgaging a larger proportion of a house purchase has provided easier access to the housing market for households with high incomes but little wealth; that applies to many younger households that do not already own a dwelling and lack savings that can be used for a down payment.

Another change is the increasing frequency of interest-only loans, above all against first mortgages. In some institutions, such loans make up about half of new first mortgage loans. The amount that is no longer required for repayment can be used instead for interest payments on somewhat larger loans. The following simple arithmetical example illustrates this. Reducing monthly repayments by SEK 1000 enables the borrower to spend this amount on monthly interest payments. With interest at 5 per cent and 30 per cent tax relief for interest expenditure, the borrower can raise almost another SEK 350,000 for the same monthly outlay as before. In the case of loans with amortisation, repayment periods have lengthened and that, too, means lower monthly expenditure that can have similar effects.

The Riksbank judges that in recent years housing loans are being obtained to an increasing extent to finance non-house purchases. The borrowers use their dwelling as security and borrow either for housing investment or for consumption in other forms. Mortgage lenders are prepared to mortgage the surplus value that arises as loans are repaid and house prices rise.

Credit assessments normally focus on debt-servicing ability. The major Swedish house mortgage institutions do have one product where security has precedence over debt-servicing ability. This is a type of loan that enables elderly borrowers to mortgage their current residence even if their income/pension is not sufficient to cover regular interest and repayment costs. The LTV ratio is, however, low. There is no repayment during the life of the loan and interest regularly accrues to the debt up to the date of repayment. This does mean that if the value of the dwelling has not risen in the meanwhile, the borrower may have to move when repayment falls due.

There is still little demand for new products. Borrowers' primary concern is clearly a low interest rate. That is the view that house mortgagers have conveyed to the Riksbank. Products that are available on other, international markets and which allow loans with negative amortisation[20] or an escalating interest rate[21] do not exist in the Swedish market. An exception is the type of loan to elderly persons mentioned above, which functions in practice as a loan with negative amortisation. New

20 With negative repayment, a new loan is added each time interest falls due. The debt accordingly grows (instead of shrinking as is the case with conventional repayment) and the additional borrowing is often used, wholly or in part, to cover interest expenditure.
21 An escalating interest rate is low initially and then rises irrespective of the prevailing level of interest rates.

borrowers can obtain certain concessions on house mortgage rates but only if they transfer all their banking business, including their wage and saving accounts, to the institution in question. Another product in the Swedish market is caps, which, in return for a premium, functions as insurance against a variable interest rate for a loan rising above an agreed level. However, caps' share of new lending is marginal.

The altered terms for mortgaging and loan repayment have not eased the demands on borrowers; rather the opposite. Certain loan terms have been tightened, such as the buffer for interest expenditure in the calculation of what debt-servicing leaves to live on, and a more sophisticated monitoring of credit risk. One factor behind the more sophisticated management of credit risk has been the new capital adequacy rules.

All else equal, higher LTV ratios render debt-servicing ability more vulnerable to changes in house prices.

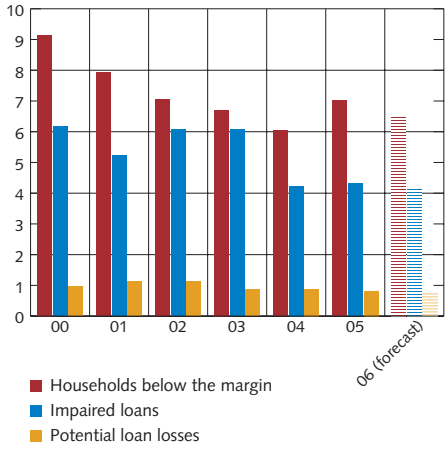
Households are financially strong. Projections of micro data, using the financial and the national accounts, show that the financial situation of households improved from 2005 to 2006 (see Chart 2:5). A problem with an analysis of household debt using aggregated data is that these data do not show how total assets and liabilities are distributed over different groups of households. It is therefore possible that the household sector's sound average debt-servicing ability conceals weak segments that in the event of financial stress could cause substantial loan losses in the bank sector. To study this, the Riksbank examines the financial situation of a large number of individual households, using Statistics Sweden's annual cross-sectional survey of households' economy (HEK).[22]

The proportion of households below the margin rose from 2004 to 2005 (see Chart 2:5). The explanation is that the financial situation deteriorated for households with the lowest incomes. Here it should be noted that the data for the lower income categories is of a poorer quality. It is therefore hazardous to draw strong conclusions about the total household sector's debt-servicing ability. However, the debts of low-income households are very small (see Chart 2:6).

On the whole, however, households are in a sound position to service debt. The increase in the proportion of households below the margin is offset by unchanged or decreased proportions of impaired loans and potential loan losses. The latter two ratios are better indicators of the risk in bank lending (see also the box on pp. 32–33).

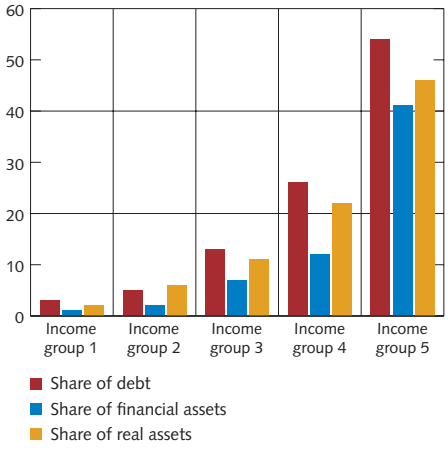
To sum up, households are financially strong and their debt-servicing ability is sound. Notwithstanding the rapid growth of household debt, there are no signs at present that the household sector can inflict serious loan losses on the bank sector. The risk for individual households has increased, however, particularly for highly mortgaged newcomers to the housing market. New home-owners are more vulnerable to the development of house prices because their dwelling represents the whole or a large part of their wealth. Furthermore, the increased proportion of interest-only loans entails a lower rate of repayment than before, so that household debt stays at a higher level for longer than it used to. In general, however, households have a sound debt-servicing ability. So at present the increased indebtedness in the household sector is not a threat to bank solvency, though it can affect household consumption. As before, however, it should be emphasised that a situation where debt and house prices rise more than twice as fast as households' disposable income is not sustainable.

Chart 2:5. Households below the margin, impaired loans and potential loan losses
Per cent



Sources: Statistics Sweden and the Riksbank

Chart 2:6. Proportions of debt, financial wealth and real wealth held by the indebted households in each income group
Per cent

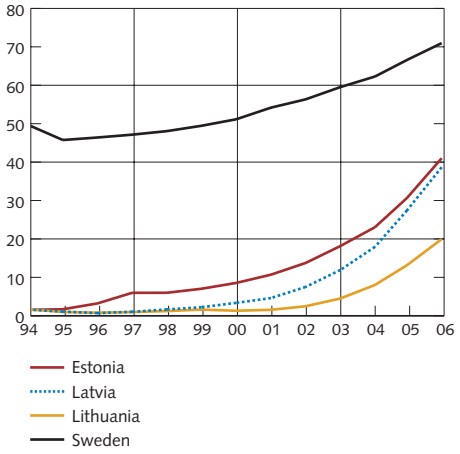


Note. Income group 1 consists of the indebted households among those with the lowest disposable incomes and so on up to income group 5, which consists of the indebted households among those with the highest disposable incomes.

Sources: Statistics Sweden and the Riksbank

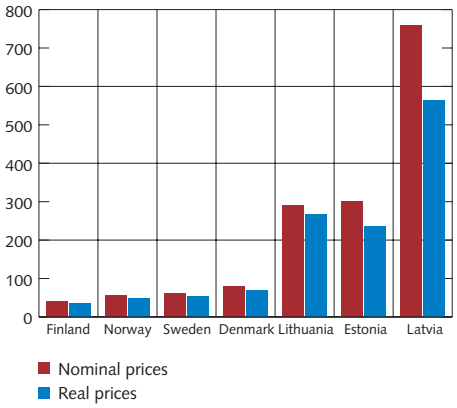
22 The debt-servicing ability of households is judged in terms of three indicators: The proportion of households below the margin denotes the proportion of indebted households that do not have a reasonable standard of living after they have paid interest and other housing costs. The proportion of impaired loans denotes these households' share of the household sector's total debt and functions as a measure of the share of the loan stock that is held by households that are likely to have difficulty in servicing loans. Potential loan losses is the share of the debt held by households below the margin that is not covered by wealth. Despite a number of inevitable shortcomings, these indicators probably give a reasonable picture of debt-servicing ability.

Chart 2:7. Household debt in Sweden and the Baltic states
Per cent of GDP



Sources: National central banks and Reuters EcoWin

Chart 2:8. Nominal and real house price increases 2000–2006 in Nordic countries and the Baltic states
Per cent



Sources: National central banks and Reuters EcoWin

Household sectors in other Nordic countries, the Baltic states and Germany

Swedish banks have become increasingly exposed to households abroad in recent years. On the whole, however, this credit risk is still judged to be moderate. The risks associated with the expansion of credit in the Baltic states are not of a magnitude that can impose serious strains on the payment system in Sweden. Lending to households makes up approximately one-third of Swedish banks' total lending abroad.

House prices, as in Sweden, have risen rapidly in other Nordic countries. The strong increases in the individual housing markets during 2006 are in line with the years before that. In Finland, however, development has been somewhat more subdued than the Nordic average. House prices have been driven by the same underlying factors: low nominal and real interest rates, structural changes in the market for housing finance (e.g. access to interest-only loans), rising disposable income and lower property taxes.

Household borrowing has also risen strongly in other Nordic countries. This applies in particular to Norway and Denmark, where the growth of household borrowing in annual terms has been around 15 per cent in the latest six months. Debt has grown to the same extent in Finland even though the increase in house prices there has been below the Nordic average. The debt-servicing ability of the household sectors in other Nordic countries continues to be sound.

In the Baltic states, the rapid growth of household debt has continued. During 2006, the expansion of lending to households in Estonia, Latvia and Lithuania averaged 67 per cent. However, traditional indicators of stability, such as debt and interest expenditure ratios, are still low for the Baltic states compared with Sweden, for instance (see Chart 2:7). The major part of household borrowing in the Baltic states is used to purchase housing and house prices have risen sharply (see Chart 2:8). Debt and house prices are admittedly rising from very low levels but the adjustment is occurring very rapidly. The increased debt makes households more vulnerable. At present, however, there are no signs that the debt-servicing ability is weakening in any of the Baltic states (see the box on pp. 24–27).

For German households, debt has grown much more slowly than in the Nordic countries. This largely has to do with the weak activity in the German housing market, where house prices have hardly changed in recent years. The debt-servicing ability of the German household sector is judged to be generally sound.

How vulnerable are indebted households?

The rapid growth of debt in recent years raises the question of whether households are becoming overburdened. This applies not least to young households that are recent newcomers to the housing market and heavily mortgaged. The issue is important for financial stability because problems could arise if a large number of households were to have payment difficulties simultaneously.

The Riksbank has concluded earlier that households in general are financially robust and their debt-servicing ability is sound. However, the possibility of a different picture for certain groups of borrowers cannot be ruled out. To study this, the Riksbank has analysed micro data on Swedish households and broken them down into five age groups.[23] [24]

Household sector debt is distributed very unevenly. Around 60 per cent of Swedish households hold debt and the loans are small for about half of this group. A large share of total debt is held by a small proportion of households with sizeable loans. However, a heavily indebted household is not automatically more vulnerable than a household with small loans. An individual household's ability to finance debt is dependent on income and the composition of assets, as well as on the assets' liquidity. The indebted percentage of all households is highest in the youngest and oldest age groups but the proportions of indebted households in these groups are below the average. The proportion of indebted households is highest in the 35–44-year age group and these households have almost 30 per cent of total debt (see Table B1).

The indebted households appear to have had an above-average development of income in recent years. All in all, their financial situation looks strong. These conclusions apply to all age groups. There is a natural variation in disposable income over the life cycle, with a peak in upper middle-age. The proportion of households below the margin rose, however, from 2004 to 2005, the reason being a worsening of the financial situation for the 20 per cent of indebted households with the lowest incomes. But the considerably poorer quality of data on the lower income groups makes it hazardous to draw any conclusions.

Assets clearly exceed liabilities in every age group. Wealth is strongly concentrated to the older age groups, particularly as regards financial assets. Among young households, where wealth is lowest, assets averaged 167 per cent of liabilities in 2005.

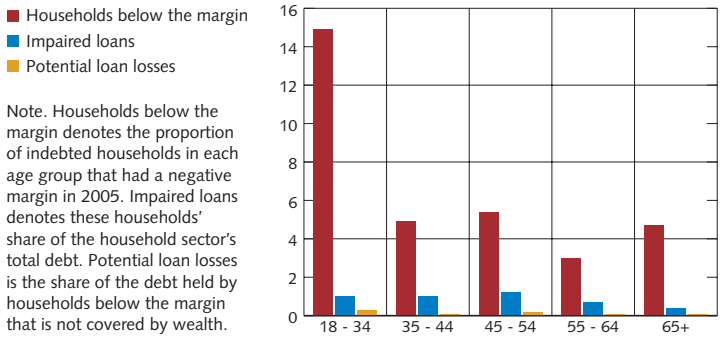
Table B1. Incomes, assets and liabilities of indebted households, 2005
Age-group averages in SEK 1000s and per cent

2005	Class 1 18 – 34	Class 2 35 – 44	Class 3 45 – 54	Class 4 55 – 64	Class 5 65+
Annual disposable income (SEK 1000s)	225	336	339	352	251
Financial wealth (SEK 1000s)	94	186	254	646	582
Real wealth (SEK 1000s)	530	1103	1279	1540	1371
Debt (SEK 1000s)	379	651	584	490	270
Debt ratio (per cent)	168	194	172	139	108
Interest expenditure ratio (per cent)	4.2	5.4	4.7	3.7	2.7
Asset/debt ratio (per cent)	167	200	264	453	737
Percentage of indebted households	29	17	15	16	23
Percentage indebted in age group	45	88	87	79	36
Percentage of total debt	19	29	25	20	8
Percentage of total assets	8	18	17	24	15

Sources: Statistics Sweden and the Riksbank

23 The micro data come from Statistics Sweden's annaul cross-sectional study (HEK).
24 The "age" of a household is represented here by the age of the adult with the household's highest income.

Chart B9. Indebted households below the margin, impaired loans and potential loan losses, 2005
Per cent



Note. Households below the margin denotes the proportion of indebted households in each age group that had a negative margin in 2005. 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.

Sources: Statistics Sweden and the Riksbank

To obtain a picture of how vulnerable the households in each age group are to changes in income and expenditure, calculations were made of financial margins, which denote what is left after tax to live on when interest expenditure and other costs of living have been paid. Households below the margin are unable to cope with current expenditures and therefore represent a high risk of not being able to service debt.

The households with the largest share of debt have high incomes and comfortable margins. In general, moreover, they have a large buffer in the form of liquid wealth. The proportion of households below the margin is largest in the youngest age group. As much as 15 per cent of the households in this group are judged to be below the margin compared with 5 per cent of the 35–44-year-olds (see Chart B9). Regardless of age, however, most of the households below the margin have small loans.

The proportion of debt that is held by households below the margin has decreased in recent years. From 2000 to 2005 it fell from just over 6 per cent to around 4 per cent. A comparison of wealth and debt for individual households below the margin can be used to estimate the proportion of impaired loans and thereby the risk of potential loan losses. With the strong development of household wealth in recent years, the proportion of potential loan losses has also continued to fall. In 2005, moreover, households' margins improved. Less than 0.8 per cent of the total stock of household debt is judged to have represented potential loan losses in 2005. Furthermore, this estimate is considerably above the actual loan losses reported by the banks on lending to households.

All in all, households as a group are financially strong and their debt-servicing ability is sound. The number of younger households below the margin is relatively large but their share of total debt is very limited. The risk of households occasioning extensive loan losses is therefore judged to be very slight, a picture that is supported by the Riksbank's stress tests. Given the Riksbank's main scenario, moreover, households' margins will continue to improve in the years ahead. Rising interest rates could, however, make household spending more cautious. Slacker household demand tends to subdue real economic activity.

The corporate sector in Sweden

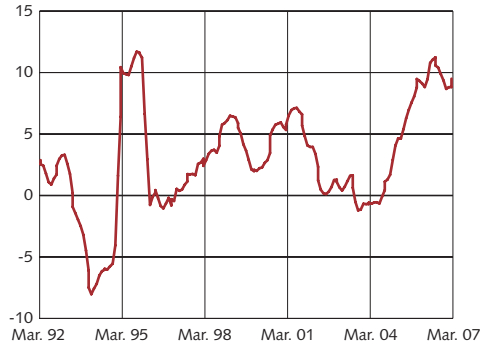
Of the banks' lending to the Swedish non-bank public, approximately half goes to the corporate sector. Historically, moreover, it is lending to the corporate sector that has occasioned the banks' largest loan losses. The Riksbank therefore follows borrowing, financial positions and debt-servicing ability in the corporate sector in order to form an opinion at an early stage about how credit risks will develop.

Corporate borrowing is continuing to grow at a high rate, though it did tend to slacken last autumn. In March, however, the twelve-month rate tended to pick up again, to almost 10 per cent, which is considerably above the average of around three per cent since the early 1990s (see Chart 2:9). The stock of bonds and certificates grew more than six per cent in 2006 from the year before. The securities market is an alternative source of funds for large companies. Borrowing against securities makes up just over 20 per cent of the total volume of corporate credit, a share that has been relatively constant in recent years (see Chart 2:10).

The rapid increase in corporate borrowing is largely explained by the upswing in investment in recent years. There is an historically strong correlation between investment and borrowing and the annual rate of investment growth in the past two years has been between seven and eight per cent. It is mainly investments in housing and transport equipment that have risen.[25]

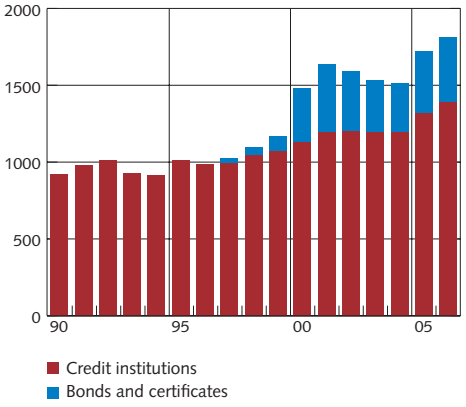
Leveraged buyouts involving private equity investment companies are another factor behind the increased borrowing. The high activity in private equity investment continued during 2006; a total of over SEK 32 billion of these companies' own capital was invested during the year.[26] That is in line with 2005 and considerably higher than in 2004. A hypothetical arithmetical example provides an indication of the proportion of new bank lending that goes to finance leveraged buyouts via private equity investment companies. Assuming that acquisitions are financed to 50 per cent with own capital and the remainder with bank loans, with a 50 per cent loan-to-value level, gives a figure of SEK 32 billion.[27] In 2006 bank lending to the corporate sector increased by almost SEK 88 billion, which means that, according to this example, 36 per cent of new lending served to finance corporate buyouts.

Chart 2:9. Corporate borrowing from credit institutions
Percentage twelve-month change, moving three-month average



Source: The Riksbank

Chart 2:10. Corporate loans from securities markets and credit institutions
SEK billion



Note. For 2006, bonds and certificates issued abroad are represented by the stock in June.

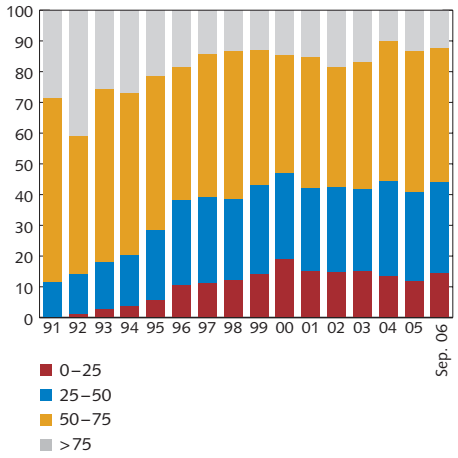
Source: The Riksbank

25 See Monetary Policy Report 2007:1, Sveriges Riksbank.

26 This refers to initial and follow-up investment in the buyout segment. For further details, see Q4 2006 in the series of quarterly surveys of private equity investment companies from the Swedish Private Equity & Venture Capital Association, the Swedish Business Development Agency and Innovationsbron, www.svca.se.

27 For leveraged buyouts a private equity investment company contributes capital up to 25–50 per cent of the transaction price and funds the remainder with bank loans for 50–75 per cent and mezzanine loans for 0–20 per cent. See the article on pp. 55–70 in Financial Stability Report 2005:1, Sveriges Riksbank.

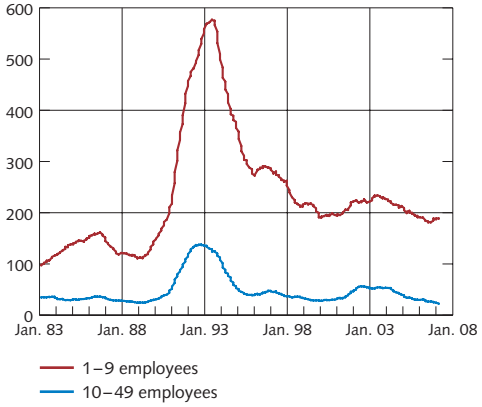
Chart 2:11. Ratio of debt to total assets in listed companies
Per cent of all listed companies



Note. The companies are grouped by the level of debt. The red bars represent the companies in the group where the debt/asset ratio is in the interval 0–25 per cent, and so on.

Sources: Bloomberg and the Riksbank.

Chart 2:12. Number of corporate defaults by company size
Moving 12-month average



Source: Statistics Sweden

The banks' total exposure to leveraged buyouts involving private equity investment companies is still relatively low. It is equivalent to just over three per cent of the stock of bank loans to the corporate sector. Another positive factor is that the banks' holdings consist almost exclusively of senior credits, which rank first in the event of a default.

The Riksbank foresees a continued increase in corporate borrowing, though at a lower rate. Such a development is indicated by the prospect of a slowdown in investment in the years ahead as the business cycle enters a quieter phase.[28] Other factors point in the opposite direction. One is the future activity of private equity investment companies; many companies remain optimistic about the economic future and see plenty of opportunities for acquisitions.[29] Demand for credit can also be generated by any disposal of state-owned companies. The prospect of a continued increase in borrowing is supported by results from a survey of 150 managers of bank branches around the country. A clear majority of the respondents count on some further increase in corporate borrowing in the coming twelve months, mainly among small and medium-sized companies.[30] It is also these categories of firm that are most dependent on bank loans for funding.

Notwithstanding the strong growth of borrowing, the ratio of corporate debt to total assets has not risen. For OMX-listed companies on the Stockholm Stock Exchange, the average ratio has been relatively constant around 50 per cent for the past five years. Neither has the proportion of firms in each group changed appreciably in recent years (see Chart 2:11). This means that corporate assets have grown at the same rate as liabilities. At the beginning of the 1990s the average debt/asset ratio was considerably higher, 70 per cent.

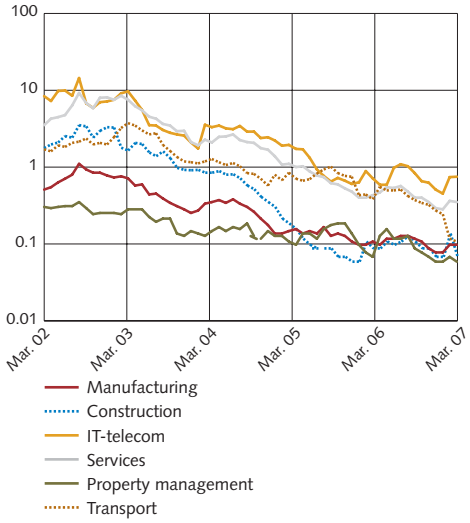
The debt-servicing ability in the corporate sector remains strong. Profitability in this sector has developed favourably in recent years. In 2006, the combined profits of companies listed on the Stockholm Exchange were up 16 per cent on the previous year. Market participants judge that the growth of profits will continue at rates around 10 per cent in 2007 as well as 2008.[31] In keeping with the strong development of profits, 80 per cent of the companies on the Stockholm Stock Exchange report a positive return on capital, which in principle is the same as the year before.[32]

28 See Monetary Policy Report 2007:1, Sveriges Riksbank.
29 See Q4 2006 in the series of quarterly surveys from the Swedish Private Equity & Venture Capital Association, the Swedish Business Development Agency and Innovationsbron, www.svca.se.
30 Almi's lending indicator, April 2007, see www.almi.se.
31 Market participants' profit predictions, measured as expected growth of earnings per share for companies listed on OMXS 30, according to SME Direkt.
32 2006 Q3 compared with 2005 Q3, from Bloomberg.

An indication of the sound debt-servicing ability is that the number of corporate defaults has continued to fall. In the twelve months to March 2007, the average number of defaults decreased for both small and medium-sized firms (see Chart 2:12). Just a few large companies default; the average number of defaulting firms with more than 49 employees in this period was three. This can be compared with an average of 20 after the marked economic downturn in the early 1990s. However, a breakdown by industries shows a rising number of defaults in many cases. It is, in fact, only in the transport sector, the services sector and manufacturing that defaults became less frequent in this period. The number of defaults in those industries has fallen more than it has risen elsewhere and this leaves its mark on the overall development of defaults.

A continued fall in defaults is foreseen in the coming twelve months, which indicates that credit quality is sound. This is evident from the forward indicator of the expected default frequency (EDF), calculated on the basis of stock-market information and data from financial statements. The indicator refers to listed companies but still provides a useful pointer to the likely future development of defaults and thereby of banks' credit risks.[33] EDFs tended to rise in February, mirroring the stock-market uncertainty and price fall (see Charts 2:13 and 2:14). This applies to individual industries as well as to the corporate sector as a whole. However, the risk of default is now somewhat lower than at the time of the December Report. A low default risk indicates in turn a sound credit quality, which means favourable conditions for servicing debt. The risk of the banks being hit by loan losses is accordingly small. Another sign of an improvement in credit quality is that the proportion of high-risk companies (those with a default probability of one per cent or more) continued to decrease in the autumn and spring (see Chart 2:15).

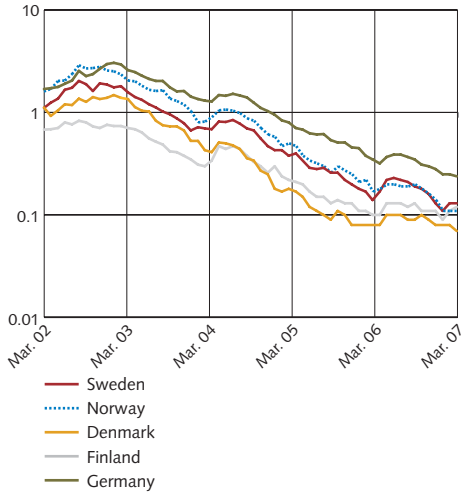
Chart 2:13. Expected default frequency (EDF) by industry for listed non-financial companies
Per cent



Note. The scale is logarithmic. EDFs are based on stock-market information and financial statements. A value of 1 per cent denotes a 1 per cent probability of default in the coming twelve months.

Source: Moody´s KMV

Chart 2:14. Expected default frequency (EDF) for listed non-financial companies in Nordic countries and Germany
Per cent

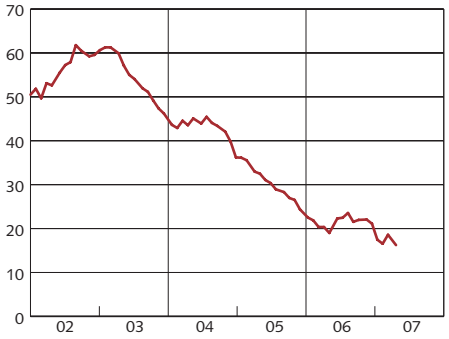


Note. The scale is logarithmic.

Source: Moody's KMV

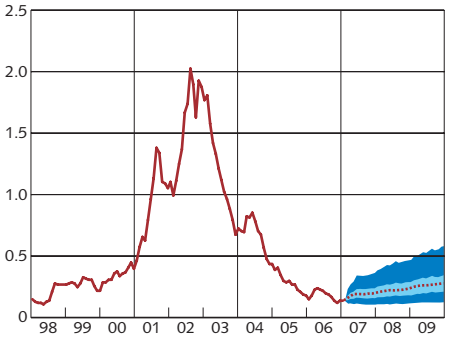
33 The probability of bankruptcies among listed companies – the expected default frequency (EDF) – within a given time horizon is calculated with Moody's-KMV on the basis of equity prices and financial statements. As a calculation of the probability that a company's assets will be smaller than its debts when the latter mature, the EDF represents the estimated risk of a limited company being unable to meet its commitments. The market value and the volatility of a company's assets are derived in turn from the company's stock-market value, using option pricing methods. Higher indebtedness, a lower market value and higher asset volatility all lead to a higher EDF, that is, to a greater probability of default within the given time horizon.

Chart 2:15. Listed companies with a default probability of 1 per cent or more
Per cent of all listed companies



Sources: Moody's KMV and the Riksbank

Chart 2:16. Expected default frequency (EDF), outcomes and forecast with 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 Monetary Policy Report 2007:1. The intervals accordingly represent the uncertainty about how EDFs are affected by changes in GDP, inflation and the risk-free three-month interest rate; the uncertainty in the macroeconomic variables is not represented.

Sources: Moody's KMV and the Riksbank

Some deterioration of credit quality is expected, however, as economic activity slackens. In the Riksbank's main scenario, a gradual economic slowdown is accompanied by rising interest rates and higher inflation.[34] When demand weakens and corporate interest expenditure rises, credit quality is expected to decrease and that can lead to more defaults. The Riksbank has developed a model for predicting credit quality in the light of macroeconomic developments. On the basis of this model the Riskbank judges that the loss of credit quality will be moderate (see Chart 2:16 and the box on p. 42).

All in all, the corporate sector's financial position remains sound. Strong productivity growth, together with expectations of a further increase in profits and relatively low interest rates, indicates that the debt-servicing ability continues to be favourable. The credit risk in the corporate sector is expected to be unchanged at a low level in the coming twelve months. After that, an increase in defaults is foreseen as economic activity slows. According to the Riksbank's calculations, however, the increase in the risk of defaults in the coming years is marginal.

34 See Monetary Policy Report 2007:1, Sveriges Riksbank.

Macroeconomic factors' impact on corporate credit quality

The Riksbank has developed a time-series model for predicting future credit quality in the corporate sector. A brief description of the model is presented here (see also Chart 2:16, which is based on the model's predictions).[35]

The model is based on aggregated data and just a few variables. This means that it is relatively straightforward and can be used in the ongoing analysis. The variable which represents credit quality is the expected default frequency (EDF), a market-based indicator of the probability of a company not being able to meet its commitments within a specified period. The model uses the average EDF for the corporate sector, which is an aggregated measure of credit quality with all company-specific risks eliminated, so that the result is affected solely by risk factors that all companies have in common. The model estimates the relationships between the EDF and three macroeconomic variables: inflation, manufacturing output and the short-term interest rate.[36] The estimates are then used together with forecasts for the three macroeconomic variables to predict credit quality.

A vector error correction (VEC) model is used to catch long-term relationships between the variables studied as well as short-run fluctuations around these relationships.[37] Estimations using monthly data for the period from November 1997 to December 2006 show that increased manufacturing output is accompanied by a lower expected default frequency. Rising inflation as well as rising short-term interest rates lead to the opposite: a higher expected default frequency and thereby poorer corporate credit quality. Different factors' effects on credit quality are ultimately an empirical matter. The predictions of credit quality are based on the main scenario for economic development in the Riksbank's Monetary Policy Report. Chart 2:16 presents a prediction of the corporate sector's EDF three years ahead. In order to demonstrate the uncertainty around the estimated parameters, the confidence interval on either side of the predictions is also calculated. The chart includes both a 50 per cent and a 95 per cent confidence interval around the main scenario.

Tests indicate that the model's ability to predict corporate credit quality is relatively satisfactory.[38] That means that the model's predictions of future credit quality can be expected to co-vary to a high degree with recorded credit quality. Less uncertainty in the macro forecast naturally lead to greater precision in the model's predictions.

In future this type of model will be used by the Riksbank as one of a number of instruments for forward assessments of the banks' credit risks. The EDF predictions are used in the next step to calculate the financial capital each bank should hold to cover future loan losses. This gives a clear indicator of the credit risk in each bank's loan portfolio. The model can also be used for the analysis of scenarios to test alternative assumptions about macroeconomic developments.

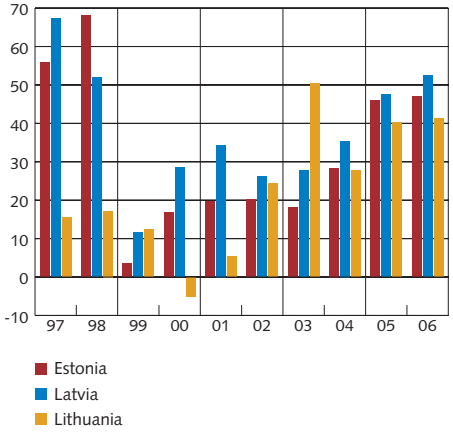
35 Examples of other studies of the relationship between macro factors and corporate credit quality are Alves, I. (2005), "Sectoral fragility: factors and dynamics", BIS papers 22, "Global default frequencies in the euro area", Special feature B, Financial Stability Review 2007:01, ECB, and Jacobson et al. (2005),"Exploring interactions between real activity and the financial stance", Journal of Financial Stability 1.

36 A 1:1 relationship is assumed between manufacturing output and GDP. As the model is estimated with monthly data, manufacturing output is used instead of GDP. A negative correlation is expected between manufacturing output and EDF because increased output implies higher economic activity and higher corporate earnings. A higher interest rate increases the interest expenditure on corporate loans, which tends to raise EDF. The link between inflation and EDF is mainly twofold, through factor prices and the prices companies charge for their goods and services. Higher factor prices lead to increased production costs and tend to impair credit quality. Higher product prices can boost earnings and thereby improve creditworthiness. The relative strength of these two effects of inflation is determined by the structure of the markets for factors of production and the company's output.

37 Vector error correction is a time-series model (a VAR model) that includes an error correction term. Such a model estimates both long-term and short-term relationships between the variables in the model. The error correction term catches the deviation from the long-term equilibrium and gradually corrects the adjustment to long-term equilibrium.

38 The model's performance is evaluated with three tests. One compares the root mean square error (RMSE) for predicted credit quality with the standard deviation of recorded credit quality. Another test compares RMSE for predicted credit quality in the VEC model with credit quality predicted with a naïve model (i.e. based on an AR(1) model or a random-walk model). The third is a sign test to determine to what extent the model's predictions develop in the same direction as actual credit quality.

Chart 2:17. Corporate borrowing from credit institutions in the Baltic states
Percentage 12-month change



Sources: National central banks.

Corporate sectors in other Nordic countries, the Baltic states and Germany

A large segment of loans from Swedish banks goes to the corporate sectors in other Nordic countries, the Baltic states and Germany. The Riksbank therefore also follows developments in these countries.

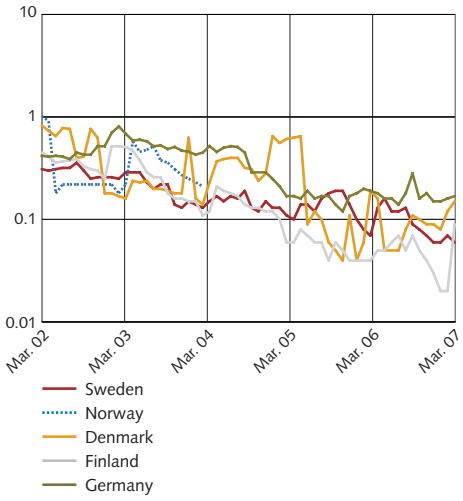
In other Nordic countries there was also a continuation of increased corporate borrowing. The growth rates during 2006 were 8 per cent in Finland, 16 per cent in Denmark and 20 per cent in Norway. The main driving forces in Denmark and Norway have been strong investment growth and high corporate sector optimism. In Finland, on the other hand, the comparatively weaker credit demand is explained by companies preferring to use funds from profits rather than external sources. They also borrow from Finnish rather than foreign banks to a greater extent than before. Investment growth in Finland has been low in the past year. Profitability is favourable in all three countries and the number of defaults is accordingly low. Expected default frequencies point to defaults remaining low in the coming twelve months, in the corporate sector as a whole as well as among real-estate companies, which indicates that credit quality will not weaken (see Charts 2:14 and 2:18).

In the Baltic states, corporate borrowing is still rising strongly. The growth rates in 2006 were 47 per cent in Estonia, 52 per cent in Latvia and 41 per cent in Lithuania (see Chart 2:17). The high credit demand has been driven by increased investment in connection with the rapid economic expansion in recent years. Since the time of the December Report, the corporate debt-to-GDP ratios in Estonia and Latvia have rapidly approached the level in Sweden. The ratio of corporate debt to equity has also tended to rise in the past two years. Meanwhile, corporate profitability has risen, as is evident from a falling number of defaults in Estonia and Lithuania, though some increase in defaults occurred in Latvia during the year. In the past year the banks have also increased their exposures to the real-estate sector. At the same time, commercial property prices have risen rapidly in all three countries.[39] In Estonia, however, banks have become successively more restrictive in providing credit for construction projects and in Lithuania there are signs that banks have tightened terms for corporate loans, mainly for large companies and longer maturities. In Latvia, too, credit terms have become somewhat more stringent during the year (see also the box on pp. 24–27).

39 This problem has also been pointed out in the central banks' stability reports.

In Germany, corporate borrowing started to pick up gradually during 2006 after falling for several years. The upturn mirrors a stronger economic development and rising investment. Corporate borrowing from credit institutions rose around 2 per cent in 2006 Q4, though that was something of a slowdown from the three preceding quarters. Companies have been consolidating balance sheets for a number of years, with a successive reduction of debt ever since 2000.[40] The economic improvement has led to a 15 per cent fall in the number of defaults in 2006.[41] The fall is expected to continue this year, which points to a further improvement in credit quality in the German corporate sector (see Chart 2:14). For real-estate companies, however, the risk of default is now somewhat higher than at the time of the December Report (see Chart 2:18).

Chart 2:18. Expected default probabilities (EDFs) for listed property companies in Nordic countries and Germany
Per cent



Note. The scale is logarithmic.
Source: Moody's KMV

Property companies

The real-estate sector is the single industry to which the banks are most exposed and the Riksbank therefore makes a separate analysis of developments here.

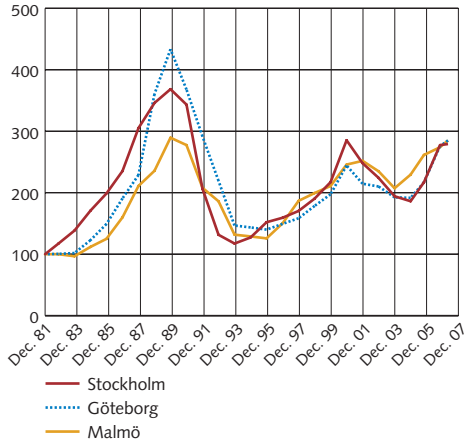
Bank borrowing by property companies slackened during 2006. The 5 per cent increase in total borrowing is a clear slowdown from the rate of 15 per cent the year before.[42]

Earnings are sound, with a further improvement in the operating result in 2006 for 11 out of 15 listed property companies. However, a large part of the improvement comes from unrealised changes in the value of real estate. It can therefore be relevant to consider the operating surplus (rent income less operating and maintenance costs). This improved in 2006 for 10 of the 15 listed property companies. Moreover, the debt ratio for these companies fell during the year.[43] Another sign of sound earnings is the low number of defaults among all property companies, unlisted as well as listed.

The future development of the real-estate market is not clear. For the listed property companies, future earnings are largely dependent on developments in the office market. As an average for these companies, office properties make up over half of the value of their real-estate holdings.[44] The largest exposures geographically are in the Stockholm region. If the office market does not turn properly, the future earnings of property companies may be hit (see the next section). At the same time, the forward indicator (EDF) points to a low default risk in the coming twelve months (see Chart 2:18).

40 See Bundesbank, Financial Stability Review, November 2006.
41 See Creditreform Economic Research Unit, Insolvencies in Europe 2006/07, www.uc.se.
42 This refers to borrowing from the four major banks.
43 The debt ratio is defined as interest-bearing liabilities in relation to equity. The data are derived from the financial statements of listed property companies, for which the average debt ratio has decreased from 2.9 in 2000 to 1.3 in 2006.
44 From Leimdörfer's survey of companies in April 2006, www.leimdorfer.se.

Chart 2:19. Real prices for office premises in central locations
Index 1981 = 100



Note. Deflated with the CPI.
Sources: NewSec AB and the Riksbank

THE COMMERCIAL PROPERTY MARKET

Developments in the commercial property market are important for stability. This market is highly important for the earnings of property companies, which taken together represent the banks' largest single exposure. Moreover, real estate often serves as security for loans. Office premises make up the major part of the listed property companies' portfolios, so the Riksbank's analysis focuses on them.

Activity in the commercial property market continued to be high in 2006. The total yield on property investment was 16.2 per cent,[45] which can be compared with 12.7 per cent in 2005. Annual turnover totalled more than SEK 150 billion, an increase of almost 30 per cent from 2005. Foreign investors are still highly interested and accounted for over 40 per cent in the investments in 2006. The presence of foreign investors is positive for stability because risks are then spread more widely. At the same time, foreign investment can lead to greater risks of contagion in the property market because the capital may be more mobile. Falling property prices in some other market might induce investors to dispose of their assets in Sweden in order to cover losses elsewhere.

Prices for office premises are continuing to rise in all three metropolitan regions. The price increases in these regions have been strong since 2005. In 2007 Q1, prices were about 14 per cent higher than a year earlier in Stockholm and 20 per cent higher in Göteborg. In both cases this does represent some slowdown from the previous quarter, when the twelve-month increase was 27 per cent in Stockholm as well as Göteborg. The twelve-month price rise in Malmö in 2007 Q1 was more moderate, less than 7 per cent (see Chart 2:19).

The price rise has not been accompanied by an equivalent increase in rents. In recent years, prices have risen considerably more than is indicated by rents, which have been largely unchanged. This continued to be the case in 2007 Q1, when rents in the metropolitan regions rose only one per cent in real terms. Real-estate prices are determined by the property's operating surplus (rent income less expenditures) and the yield required by investors. The level of rents is determined in turn by the proportion of vacant premises and the required yield by the risk-free interest rate and the risk premium.

45 According to SFI/IPD Svenskt Fastighetsindex. Yield is decomposed into effects of direct returns and changes in value; the latter is divided in turn into rent growth and required yield.

The weak development of rents is due to the level of vacancies being relatively unchanged on the whole. The development of vacancies has varied between the regions (see Chart 2:20). In recent years it has been relatively most favourable in the dominant Stockholm region, though vacancies there did tend to increase towards the end of 2006. The vacancy rates in Göteborg and Malmö fell during 2006 and continued to do so in 2007 Q1. Vacancy rates also vary with the type of premises. Demand for modern office premises is relatively stronger and this has resulted in lower vacancy rates and rising rents. [46]

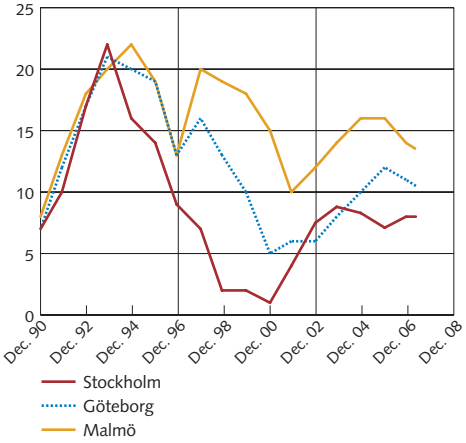
Increased employment can contribute to fewer vacancies and higher rents. Employment rose in the second half of 2006, above all in the services sector, and the Riksbank's forecast of employment in 2007 has been adjusted upwards. Further ahead, employment is calculated to slacken again as GDP growth falls back. [47]

However, an increased supply of office space can have a negative impact on vacancies or offset an increase in employment. Increments to office space have been small in recent years in all three metropolitan regions. In the next few years an increased supply is foreseen in Stockholm and Malmö, while the supply in Göteborg is expected to remain small. In recent years no projects have been started before the premises-to-be have been rented out. This now seems to have changed in the Stockholm region; recently there has been a tendency to start projects without renting out all the space in advance. [48]

In that rents and vacancies have hardly changed, the main explanation for the recent increase in prices seems to be a falling required yield. In the past twelve months the required yield has fallen even though interest rates have risen (see Chart 2:21). The implication of this is either a decreased risk premium for property investment or investor expectations of a future increase in rents.

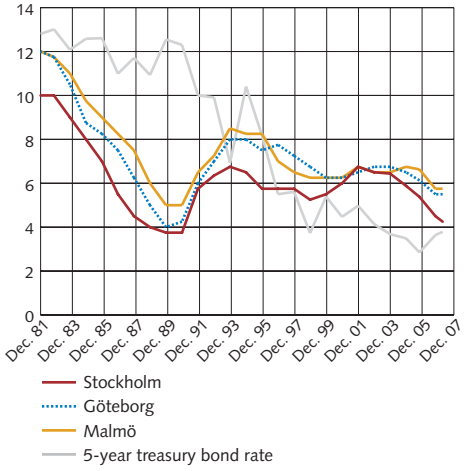
As the picture of future earnings is not clear, the lower required yield can still be questioned. At present, an increase in future earnings is indicated by the prospect of a comparatively strong expansion of employment in the coming year, followed by a renewed slowdown. Increased employment in office-intensive industries can lead to lower vacancies, given that firms choose to rent more space rather than

Chart 2:20. Vacancy rates for office premises in central locations
Per cent



Sources: Newsec AB and the Riksbank

Chart 2:21. Average direct yield required for office premises in central locations
Per cent



Sources: NewSec AB and Reuters EcoWin

46 See Newsec, Nordic Report, Spring 2007.
47 See Monetary Policy Report 2007:1, Sveriges Riksbank.
48 See Newsec, Nordic Report, Spring 2007.

fitting more employees into their existing space. On the other hand, employment growth was unexpectedly strong in the second half of 2006 but that has not yet shown up in the overall vacancy rate. While the strong economic activity may contribute to higher rents, the recent high GDP growth has not had such an effect. In the years ahead, the successive economic slowdown will gradually limit the scope for rent increases. Thus, it is not clear how the office market will develop and it is therefore uncertain whether expectations of future earnings will be fulfilled. However, the real-estate market is developing in line with other asset markets where rising prices have been accompanied by a falling compensation for risk. The question in those markets, as in the real-estate market, is whether the risk premium on investment represents a reasonable assessment of the risks.

Summary assessment of the Swedish banks' borrowers

- Household debt and house prices have both risen strongly in the past year, though the rates have tended to slow. In the short run, the increases in house prices and debt will probably continue to be relatively high. In the longer run, house price increases that greatly exceed the growth of disposable income are not sustainable.

- Households are financially strong at present and in a favourable position to service debt. There may, however, be an increased risk of payment problems for individual households, particularly for highly mortgaged newcomers to the housing market.

- Corporate borrowing is continuing to rise at a rapid rate, though the increase did tend to slacken in the autumn. The Riksbank judges that borrowing will continue to rise but at a lower rate on account of weaker investment growth. There are, however, other factors that point to a sustained increase. One of them is leveraged buyouts by private equity investment companies because these companies see favourable opportunities for future corporate takeovers.

- There have been few corporate defaults and most of the evidence points to the risk of default being persistently low in the coming twelve months. This indicates that the debt-servicing ability will be sound in this period. As economic activity slackens, however, default risks may become somewhat higher.

- Prices in the market for office premises have risen without an equivalent increase in rents. This indicates a lower required yield, which points either to expectations of an imminent improvement in rents or to lower required compensation for risks.

- A future increase in income from office premises is indicated at present by the prospect of a comparatively strong expansion of employment in the coming year. That could reduce vacancies and pave the way for rent increases. However, the strong increase in employment in the second half of 2006 has not yet left a mark on the overall vacancy rate. Moreover, an economic slowdown in the coming years is likely to limit the scope for future rent increases.

Developments in the banks

The major banks' profitability has been improving since 2003 and continued to do so in the latest four-quarter period, though the increase did tend to slacken towards the end of the period. Important factors to the improvement in profitability have been rising stock prices and increased stock-market turnover. The Riksbank considers that the banks' capacity for coping with unexpected negative events remains sound. Moreover, the banks' risks appear to be relatively limited. However, their expansion in Eastern Europe does entail certain risks in view of the rapid increase in debt among borrowers there.

The Riksbank's analysis is concentrated to the four major Swedish banks – Handelsbanken, Nordea, SEB and Swedbank – because it is primarily these banks that are of importance for financial system stability. These banks now operate to various extents in markets abroad. The analysis considers each bank group as a whole because it is a bank's consolidated risk exposure that is relevant for financial stability.[49]

The different risks to which banks are exposed are considered in turn. The account begins with the development of profitability, which can indicate a bank's strategic risk. This is followed by an evaluation of asset quality to show how credit and market risks are developing. The growth of bank equity is then analysed to study financial resilience. The structure of bank funding provides an indication of potential liquidity risks. In conclusion the Riksbank presents the results of stress tests that illustrate the banks' resilience to two scenarios that are unlikely but plausible.

Profitability and earnings – strategic risk

Bank profitability is a crucial factor for stability. As a rule, sound profitability enhances a bank's capacity for coping with unexpected negative shocks.

There was some improvement in the major banks' profitability in the latest four-quarter period.[50] The return on equity was above 18 per cent. This return has improved successively since 2003 and the current level is about 6 percentage points higher than at that time. The return on equity (ROE) can be decomposed into profit margin, risk-adjusted income, risk level and leverage.[51] Higher profit margins are the main source of the improvement in ROE since 2003 as well as in the latest four-quarter period, though this was largely counterbalanced by

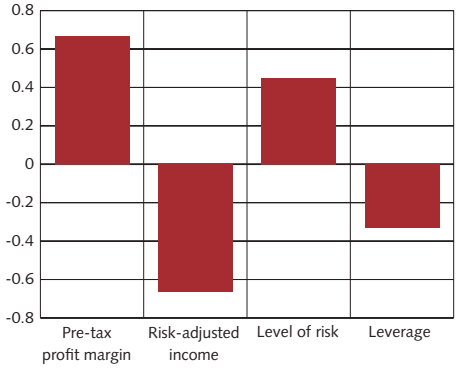
49 Unless stated otherwise, the term major banks accordingly refers here to the bank groups.

50 The latest four-quarter period runs to the end of 2007 Q1. Unless stated otherwise, comparisons are made with the preceding four-quarter period. All performance data have been adjusted for sizeable one-off effects.

51 $$\text{Pre-tax ROE} = \overbrace{\frac{\text{pre-tax profit}}{\text{operating income}}}^{\text{profit margin}} \times \overbrace{\frac{\text{operating income}}{\text{risk-weighted assets}}}^{\text{risk-adjusted income}} \times \overbrace{\frac{\text{risk-weighted assets}}{\text{total assets}}}^{\text{risk level}} \times \overbrace{\frac{\text{total assets}}{\text{equity}}}^{\text{leverage}}$$

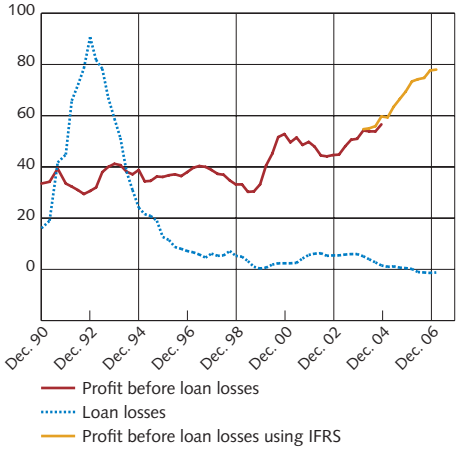
For a fuller account of the components, see the box on pp. 35–36 of Financial Stability Report 2004:1, Sveriges Riksbank.

Chart 3:1. Composition of pre-tax return on equity
Percentage points



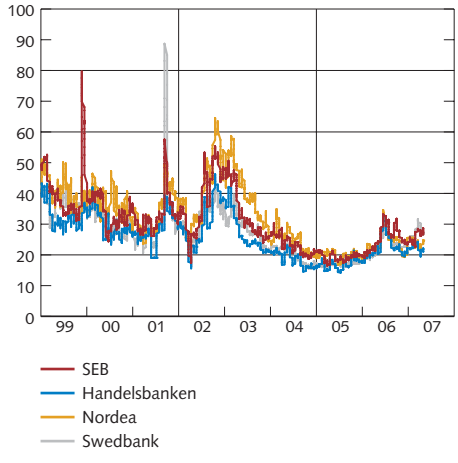
Note. The data refer to the latest four-quarter period.
Sources: Bank reports and the Riksbank

Chart 3:2. Profit before loan losses in the major banks and net loan losses
Four-quarter totals, SEK billion, 2007 prices



Sources: Bank reports and the Riksbank

Chart 3:3. Implied volatility of bank equity
Per cent, moving 10-day average



Sources: Bloomberg and the Riksbank

lower risk-adjusted income (see Chart 3:1). Higher profit margins presumably enhance a bank's financial strength. The level of risk also rose, which means that assets weighted for risk have increased relative to total assets. The higher risk-weighted assets partly reflect larger loan stocks, which could represent greater risks and therefore does not necessarily imply an improvement in financial strength. However, this development was partly offset by lower leverage.

Profit before loan losses has continued to rise (see Chart 3:2). Moreover, the item loan losses made a positive contribution to profit because recoveries and reversals exceeded provisions for new loan losses (see also the section on credit quality).

Stock-market expectations point to a further increase in the major banks' profitability. These expectations are expressed in expected earnings per share (EPS). Since the time of the December Report, EPSs for 2007 and 2008 have risen by an average of about 7 and 9 per cent, respectively.[52]

Uncertainty about future bank earnings is relatively unchanged. This is indicated by the implied volatilities for bank equity, which mirror stock-market uncertainty about future bank earnings.[53] Volatilities are at much the same level as at the time of the December Report, which is in line with the stock market as a whole (Chart 3:3; see also Chapter 1). When concern about the Baltic states grew this spring, however, there was some increase in the implied volatilities for SEB and Swedbank, the Swedish banks with the largest exposures to that region.

INCOME AND EXPENDITURE

The improvement in profit margins reflects the development of the major banks' incomes and expenditures in the latest four-quarter period.

- **Net interest income rose about 5 per cent.** While lending margins continued to narrow as a result of increased competition, larger deposit margins had a positive effect on net interest income. The main contribution to net interest income came, however, from the continued growth of lending (see the box on p. 54).

- **Net commission income rose about 8 per cent.**[54] The increase was generated mainly by rising stock markets and high turnover,

52 EPSs on May, 2007. Source: SME Direkt.
53 Implied volatility, calculated from equity option pricing, represents market expectations of future volatility.
54 Net commission income for the four major banks is considered here excluding Handelsbanken's insurance item and Nordea's life assurance item.

which benefit securities-related income (see Chart 3:4). High stock-market turnover normally boosts bank income from brokerage. Higher equity prices have a direct effect on bank income from capital management because this is linked to the amount of capital being managed.

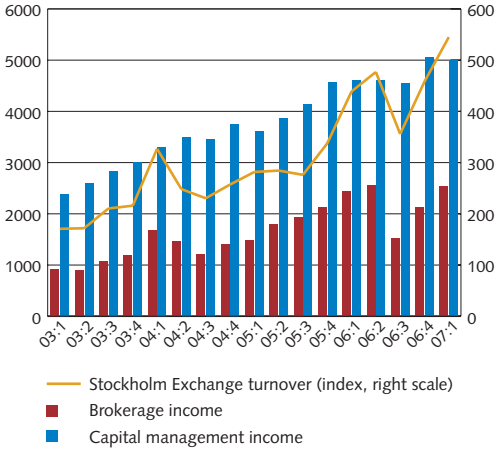
- **Financial items at current values fell about 4 per cent.** This item includes changes in value and profits from equity, interest-bearing securities and exchange rate movements. Some banks also include changes in insurance-related values. The development of these sub-items varied between the banks.[55]

- **The expenditures of the major banks rose about 4 per cent.** A large part of the increase came from rising staff costs but other administrative costs also grew. There was a 3 per cent increase in the number of employees. Even with this increase in expenditures, cost efficiency measured as costs relative to income (C/I) improved to 52 per cent (see Chart 3:5). In other words, income growth in the latest four-quarter period exceeded the increase in costs.

The higher profitability in the latest four-quarter period means, all else equal, that the banks' resilience has been strengthened. The diversification of income has helped to make the banks less dependent on net interest income, which is positive for stability. A large part of the improvement in profitability had to do with rising stock markets; higher net interest income also contributed. Another factor behind the improvement in profitability has been positive changes in the value of financial transactions but this was not the case in the latest four-quarter period. Such changes in value do not necessarily represent an improvement in the underlying earnings and therefore do not automatically influence the assessment of bank resilience.

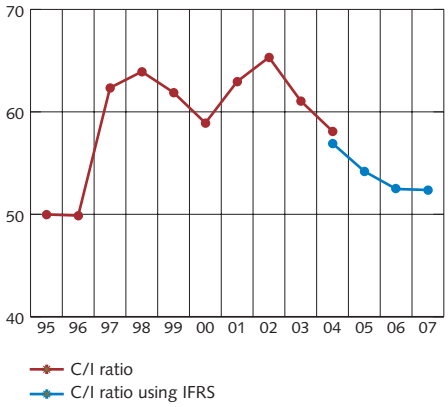
The expansion of the banks' operations in Eastern Europe may, however, involve a higher level of risk. Some of the major banks have recently made or announced minor acquisitions, for instance in Poland, Russia and Ukraine.[56] The eastward expansion is a consequence of market growth there being higher than in many West European markets (see the box on pp. 24–27). The risks are associated in the first place with the rapid accumulation of debt and possible future macroeconomic imbalances. An unfavourable development can entail lower income for the major banks as well as higher loan losses. A greater distance between the banks' operations

Chart 3:4. The major banks' securities-related commission income and Stockholm Stock Exchange turnover
SEK million and index



Sources: Bank reports, Reuters EcoWin and the Riksbank

Chart 3:5. Cost efficiency of the major Swedish banks
Per cent



Note. The data for 2007 refer to the latest four-quarter period.

Sources: Bank reports and the Riksbank

55 Some banks have recalculated this item, which complicates comparisons between four-quarter periods. Moreover, the banks differ as to how they report sub-items.

56 One example is Nordea's acquisition of about 75 per cent of Russian JSB Orgresbank. Swedbank has agreed to acquire TAS-Kommerzbank in Ukraine. Hansabank (a subsidiary of Swedbank) and Handelsbanken have opened a number of branches in Russia, as has SEB in Poland.

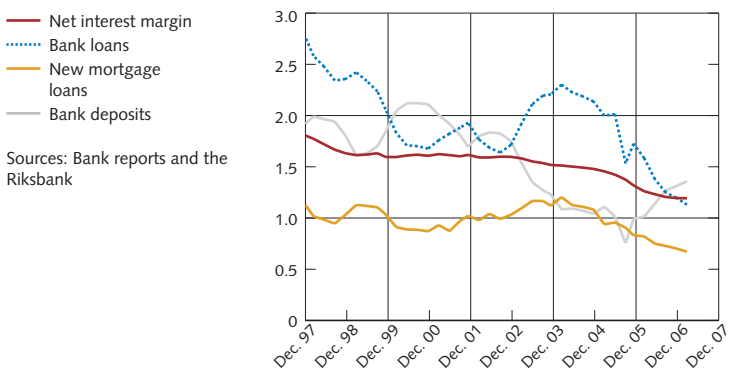
Net interest income

The rapid expansion of lending has been the main factor behind the growth of net interest income. Much of the improvement comes from the expansion of banking operations abroad. A further improvement in net interest income calls for a continued expansion of lending. Forecasts of future increases in interest rates suggest that a positive contribution to net interest income can come from deposits.

Net interest income is the largest source of bank income, contributing roughly half of the total. It mainly consists of income from bank lending less costs for deposits and borrowing. The crucial importance of net interest income for bank profits warrants a closer look at the underlying factors.

Deposit margins in the Swedish market widened after some years of downward pressure. From 2002 to 2005, deposit margins were squeezed by falling market interest rates (see Chart B10). Simplifying somewhat, a deposit margin is the difference between what the bank earns by investing the money in the market and the interest it has to pay to the depositor. When market interest rates fall, banks lower their deposit rates to make up for the lower return on their market investments. However, the interest rate for many bank accounts is low or nil, which rules out a further reduction; so in these cases a falling market interest rate entails a narrowing of the margin. When market interest rates began to rise in the second half of 2005, deposit margins accordingly improved.

Chart B10. Net interest margin and spreads for the major banks on deposits, bank loans and mortgage loans
Per cent, moving 4-quarter average



Sources: Bank reports and the Riksbank

The expansion of lending in Sweden has continued despite higher market interest rates. The rapid growth of lending, with housing loans to the household sector as a major item, continued at a rate of about 11 per cent for the major banks in the latest four-quarter period. The rising market interest rates could be expected to subdue lending in that they increase the cost of borrowing. Probable reasons for the lack of such an effect include the growth of disposable income and a narrowing of lending margins since 2004 in connection with increased competition. The new capital adequacy rules may also have contributed (see also the section below on capital). It is therefore possible that the effect of the less expansionary monetary policy, with higher interest rates, has been smaller than would otherwise have been the case. But lending margins have narrowed not only for housing loans but also to the corporate sector in the Swedish market, which could indicate that higher risks are being taken in lending.

A large part of the improvement in the banks' net interest income comes from the expansion of certain operations abroad. Although there has also been pressure on margins in some markets abroad, margins there are still sometimes higher than in the Swedish market.

A further improvement in net interest income is mainly dependent on a continued expansion of lending. That is, in fact, expected in both the corporate and the household sector, albeit at a slower rate than previously. The competition in the market for housing finance in particular makes marked future improvements in lending margins unlikely. In the case of deposit margins, a continued increase in market interest rates could lead to wider margins, with a positive effect on net interest income, but there are also signs that these margins may come under future downward pressure.

and their home market can also be associated with some increase in risk. But while the expansion does involve some risk, geographic diversification can be favourable for stability. Moreover, the establishments can increase the potential profitability of the Swedish banks.

A positive stock-market trend is required for a further improvement in the major banks' profitability. High turnover favours brokerage income and higher equity prices have a direct impact on bank earnings derived from capital management. Brokerage income may be affected to some extent by price pressure in connection with the increased competition. This is beginning to show up in brokerage fees. No such price pressure is evident, however, in the management of mutual funds.[57] A further improvement in profitability is also dependent on a continued expansion of lending (see the box on p. 54).

Assets and capital – credit and market risk

The stock of loans to the non-bank public makes up as much as 60 per cent of the major banks' assets. This makes credit risk the largest single risk in the banks' operations. As credit risk may ultimately result in loan losses, the analysis focuses on impaired loans and loan losses. The banks also have assets involving market risk, which is usually a minor component of total risk. Market risk gives rise to losses as a result of, for example, movements in interest rates, exchange rates and equity prices. Capital is also considered because it mirrors the banks' resilience to unexpected negative events.

There are no clear indications of an increase in the banks' market risks in the latest four-quarter period. The risk-weighted assets associated with market risk did increase for some of the banks from 2005 to 2006 but the development was not clear-cut.[58] The development of value at risk (VaR) followed a similar pattern; VaR rose for some banks, while for others it was relatively constant or lower for 2006 compared with the previous year.[59]

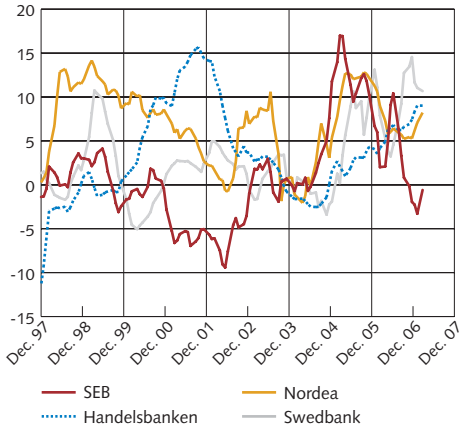
Interest rate risk, however, seems to have become somewhat higher for some banks. The Riksbank has therefore tested how quickly an abrupt interest rate increase could affect the banks. The scenario assumes that interest rates for all maturities rise 100 basis points. The banks' profits, as reported for 2006, would then be reduced by up

57 Although there are low-price alternatives, relatively few customers change their fund managers. This may have to do with a reluctance to realise changes in value. See Konkurrensen på bankmarknaden (Competition in the bank market), March 2007, a report from ECON commissioned by the Swedish Bankers' Association.

58 Assets weighted for market risk decreased relatively markedly for one bank due to the introduction, with Finansinspektionens' approval, of internal methods for the calculations.

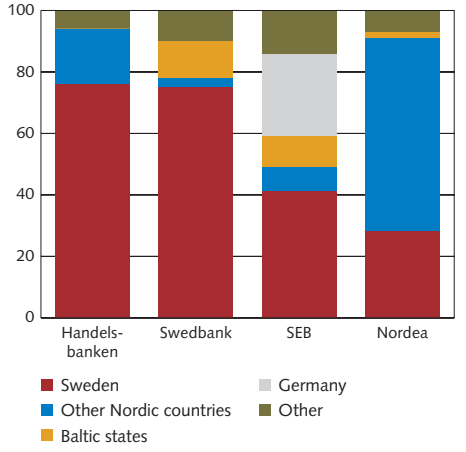
59 Value at risk denotes the amount at risk in an investment or a portfolio with a specified probability and over a specified period.

Chart 3:6. Lending by credit institutions to the corporate sector in Sweden
Percentage 12-month change, moving 3-month average



Source: The Riksbank

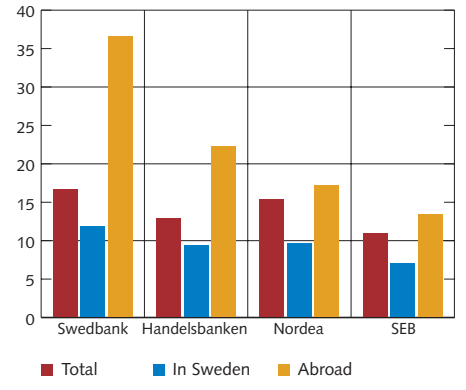
Chart 3:7.Geographical composition of lending, December 2006, per cent



Note. For SEB and Swedbank lending to credit institutions are included. For Handelsbanken and Nordea lending to credit institutions are excluded.

Sources: Bank reports and the Riksbank

Chart 3:8. Lending to the general public in Sweden and abroad
Percentage annual change up to the end of 2007 Q1



Sources: Bank reports and the Riksbank

to 11 per cent because of the effects, all else equal, on the banks' interest-bearing assets and liabilities.[60] That does presuppose that the banks choose to realise the whole of the change in value. Such a scenario is not entirely probable because some changes in interest-bearing assets and liabilities do not have to be booked directly in the profit and loss account.

LENDING

Total lending by the major banks rose about 14 per cent in annual terms in the latest four-quarter period. In the Swedish market, the growth of lending to households stabilised at a high level. For all the four major banks the growth rate in annual terms was in the interval 10–12 per cent. The growth of corporate lending varied more between the banks, from 0–11 per cent (se Chart 3:6).[61] Lending to the corporate sector is more volatile because large items can appear and disappear at short notice. The average growth rate for lending to the corporate sector by the major banks was almost 8 per cent.

The banks have expanded their lending outside Sweden.[62] The greater part of lending by Handelsbanken and Swedbank is for the Swedish market; Nordea's main positions are in the Nordic countries and almost one-third of lending by SEB is in Germany (see Chart 3:7). Moreover, the Baltic states, where lending is still rising explosively, account for relatively large shares, about 10 and 12 per cent, respectively, for SEB and Swedbank.[63] Thus, the rapid growth of Swedbank's lending abroad is explained by the bank's operations in these countries (see Chart 3:8). The main reason why SEB's operations abroad have not grown correspondingly is the considerably weaker growth of lending in Germany.

CREDIT QUALITY

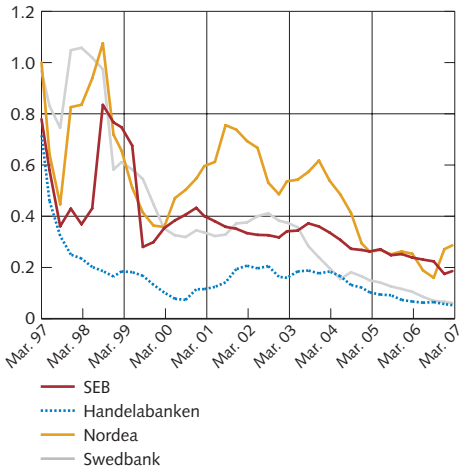
The level of impaired loans in the major banks' stock of loans is still very low. In the latest four-quarter period it was 0.5 per cent, marginally lower than at the time of the December Report. This ratio is an indicator of a bank's credit quality. But as it concerns events that have already occurred, it contains no forward-looking components.[64]

Reversals and recoveries of earlier provisions exceeded new provisions for loan losses.[65] This has been the pattern for three of the four major banks for a number of quarters. However, new and

60 The outcome differs between the banks, partly because some of them do not report off-balance-sheet items.
61 Quarterly average of annual growth rates.
62 See Chapter 2 for the growth of lending to other Nordic countries and the Baltic states.
63 These figures include lending to credit institutions as well as to the general public.
64 Impaired loans are claims on which potential losses have been identified, thereby leading to loss provisions. They are calculated here gross, that is, before accumulated provisions.
65 Loan losses are calculated as provisions for actual and probable loan losses less recoveries and reversals.

probable loan losses were somewhat higher than in the preceding four-quarter period (see Chart 3:9). This could be an indication of some future increase in loan losses. However, the growth of banks' loan portfolios is in itself a reason for increased provisions. Relative to lending, provisions were somewhat lower than in the preceding four-quarter period.

Chart 3:9. Provisions for incurred and probable loan losses
Per cent of loan stock, accumulated over four quarters



Sources: Bank reports and the Riksbank

There are many indications of an increased credit risk in the Baltic states. Income from and lending to the operations in these countries are both growing relative to the total lending and income of two of the major bank groups. Moreover, persistently high inflation and borrowing growth in two of these countries are combined with a high proportion of foreign-currency loans, so that some borrowing carries an exchange risk. A marked economic slowdown in these countries could therefore have a considerable impact on the Swedish banks, above all in the form of decreased income (see the section below on stress tests and the box on pp. 24–27).

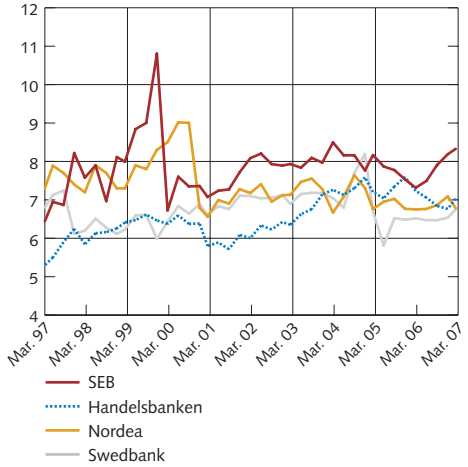
The margins on lending to the corporate sector in Sweden seem to be narrowing, which suggests that the banks are taking greater risks. To some extent the smaller margins can be explained by the favourable economic outlook, low default rates and sound ratings. Another explanation could be increased competition. Experience has shown, however, that it is when economic activity is rising that many loans of a poorer quality are granted. That raises the question of the extent to which the banks are pricing for a possible future deterioration in credit quality.

The outlook in the commercial property sector remains uncertain. Prices for commercial real estate seem to be rising in certain regions even though vacancies are unchanged or even increasing and rents are virtually unchanged. This suggests that the required yield on investment has fallen. That could represent increased risks in the real-estate sector, which is the single industry to which the banks are most exposed (see also in Chapter 2).

The Riksbank's economic forecast points to loan losses remaining limited. The expectations of comparatively high GDP growth in 2007 make it unlikely that loan losses will increase markedly for cyclical reasons.[66] There are also the prospects of persistently low corporate defaults and a sound debt-servicing ability in the household sector (see Chapter 2).

66 The economic scenario in this Report in based on the Riksbank's assessment in Monetary Policy Report 2007:1.

Chart 3:10. Tier 1 capital ratios of the four major Swedish banks
Per cent



Sources: Bank reports and the Riksbank

CAPITAL

The Tier 1 capital ratios of the major banks averaged 7.3 per cent at the end of the latest four-quarter period. Capital adequacy ratios averaged 10.3 procent (see Chart 3:10).[67]

The new capital adequacy rules (Basel II) are now in force and the banks applied them for their Q1 reports this year. Banks are required by law to maintain Tier 1 capital and capital adequacy ratios of not less than 4 and 8 per cent, respectively. Under the new rules, however, less capital than before may suffice for capital adequacy. This is because banks are now permitted to measure capital risk with internal models instead of standardised methods.[68] Some of the Swedish banks have indicated that this will enable them to reduce their risk-weighted assets by 30 to 40 per cent. The main reason for this is that a large segment of their credit portfolios consists of loans to households, which carry a low risk and under Basel II therefore require less capital cover. The banks then need less capital for the same Tier 1 capital and capital adequacy ratios as before. For the first three years, however, the lowering of required capital is limited by a series of steps, representing the level below which capital may not be reduced even though the bank's internal models allows that. In that some reduction of risk-weighted assets is permitted for Q1 this year, Tier 1 capital ratios as of March 2007 are not fully comparable with ratios reported earlier. The Tier 1 capital ratios reported by a number of banks for Q1 this year are higher than for 2006 Q4; calculated with the earlier rules, however, the ratios for some of the banks would have been lower. Apart from the statutory requirement, there is an incentive for banks not to hold unduly little capital because this affects their credit rating and a higher rating gives lower financing costs. It therefore remains to be seen to what extent the banks use the possibility of reducing capital.

For stability, a high level of bank capital is positive because it represents a large buffer for unexpected negative events. However, stability considerations must be weighed against the cost of holding capital. In socioeconomic terms, a high level of equity may not be more efficient if a lower level suffices for the bank's risk profile.

67 Tier 1 capital and capital adequacy ratios are defined as Tier 1 capital and the capital base, respectively, in relation to risk-weighted assets. Simplifying somewhat, Tier 1 capital is the bank's own equity less, for example, investment in insurance operations and goodwill. Subject to supervisory approval, it can also include certain types of debenture (supplementary to Tier 1 capital and supplementary hybrid capital). The capital base is the sum of Tier 1 and supplementary capital. An example of supplementary capital is debentures. Risk-weighted capital is calculated by weighting assets and off-balance-sheet items for assessed risk.

68 Internal models for classifying risks require the approval of Finansinspektionen; an internal system does not have to be applied to the entire loan stock.

Funding – liquidity risk

One of the banks' major functions is the conversion of liquid liabilities, in the form of deposits and borrowed funds, into illiquid assets in the form of credit. If deposits do not cover loans, banks borrow the difference in financial markets. That entails a liquidity risk because the market funding would probably dry up if a bank's debt-servicing ability were to be questioned. The composition of a bank's funding is therefore a key to the assessment of liquidity risks.

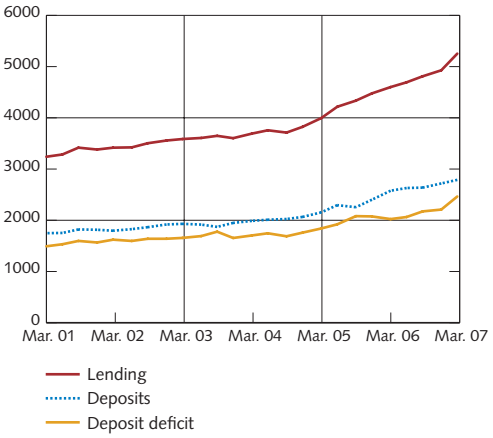
The major Swedish banks are becoming increasingly dependent on market funding. Lending has risen faster than deposits, leaving the banks with a growing deposit deficit (see Chart 3:11). The banks use market funding to fill this gap.

A substantial share of market borrowing is arranged in foreign currency. The major Swedish banks' operations in foreign interbank and securities markets used to be confined to borrowing as a means of funding loans to the Swedish non-bank public. Today, they also serve the non-bank public in other countries and therefore have to fund deposit deficits there. As the borrowing is matched with the currency composition of the assets via derivatives, funding in another currency does not necessarily entail an exchange risk.

The composition of funding differs between the four major banks to suit the nature of their operations. With a large proportion of their operations in the Swedish market, Swedbank and Handelsbanken have large deposit deficits in Swedish kronor. Handelsbanken funds its deficit mainly by issuing securities in SEK and USD; Swedbank uses these markets to a large extent but also has considerable funding in euro (see Chart 3:12). Nordea, with an appreciable amount of net lending in Denmark and Norway, funds this mainly in the Danish securities market (the Danish and Norwegian currencies are included in "Other currencies" in Chart 3:12). Nordea also borrows to a relatively large extent against USD and euro securities. Much of SEB's lending in Germany and the Baltic states appears to be funded in the euro market.

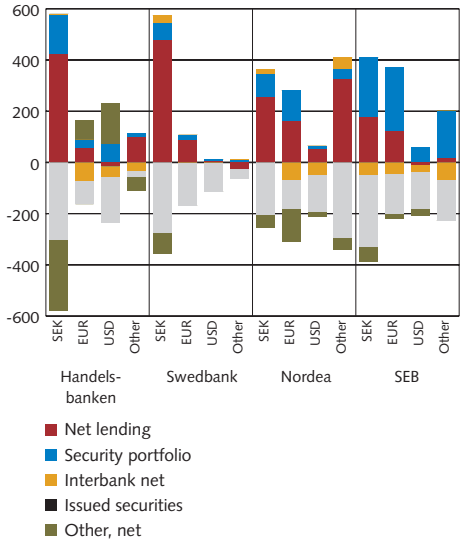
A geographical diversification of funding markets can be said to be positive for stability because the banks are then less dependent on any one market.

Chart 3:11. The major Swedish banks' deposits, lending and deposit deficit
SEK billion



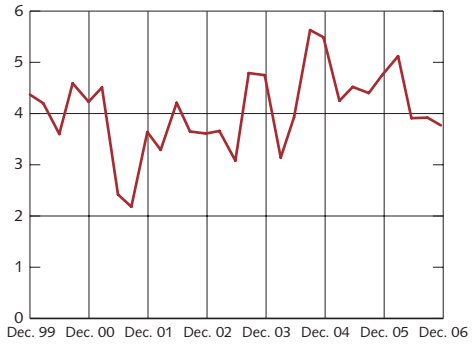
Note. Deposit deficit = lending less deposits.
Sources: Bank reports and the Riksbank

Chart 3:12. Interest-bearing assets and liabilities, December 2006, SEK billion



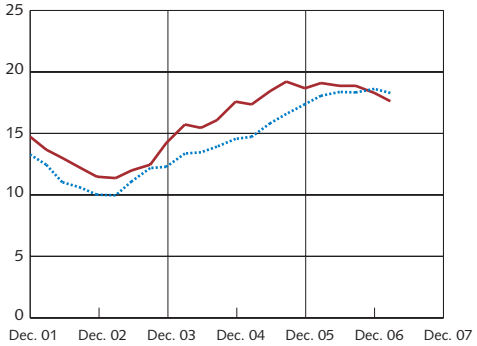
Sources: Bank reports and the Riksbank

Chart 3:13. The lowest Tier 1 capital ratio among the other three major Swedish banks if the fourth has suspended payments
Per cent



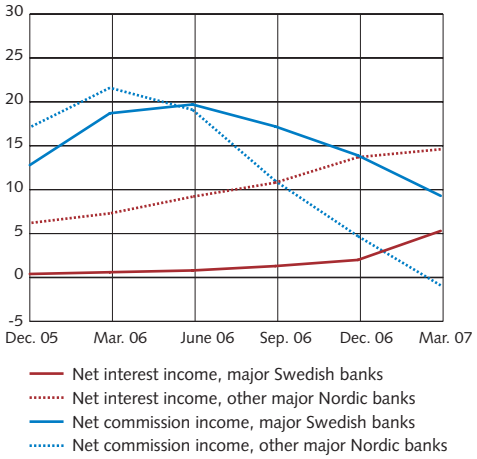
Source: The Riksbank

Chart 3:14. Post-tax returns on equity in the major Swedish and other Nordic banks
Per cent, accumulated over four quarters



Sources: Bank reports and the Riksbank

Chart 3:15. Net interest and commission incomes for the major Swedish and other Nordic banks
Percentage annual change, accumulated over four quarters



Sources: Bank reports and the Riksbank

Counterparty exposures – risk of contagion

The central role of the major banks in the financial system entails considerable claims, mutually and on other market participants, so-called counterparty exposures. For stability, these exposures to counterparties are particularly relevant when the counterparty is also a bank or some other financial institution. There is then a risk of contagion, that is, of problems in one bank spreading to other banks.

The risk of contagion between the major banks rose in the second half of 2006 from the preceding half-year. This is shown by the Riksbank's tests of the banks' mutual exposures in the interbank market.[69] These tests are made at quarter ends, so they provide just a momentary picture that does not necessarily correspond to the development during the quarter. The tests assume that one bank suspends payments and that the other three banks lose 75 per cent of their exposures to the defaulting bank. It is assumed that 25 per cent can be recovered because part of the exposures is backed by collateral.[70] A bank is assumed to be insolvent if its Tier 1 capital ratio falls below the statutory requirement of four per cent. In the second half of 2006, two interbank exposures were so large that the Tier 1 capital ratio would have fallen below 4 percent. This is twice as many as in the preceding half-year. The explanation is that some of the banks have had large holdings of securities issued by one and the same counterparty.

The risk of contagion between the banks has increased in the latest half-year but remains relatively low. This is shown by a comparison over the entire period in which the Riksbank has made tests of this type (1999–2006). The calculated Tier 1 capital ratios were below the 4 per cent statutory requirement in five per cent of all the cases. The plots in Chart 3:13 represent the major bank with the lowest Tier 1 capital ratio in each period after the test of interbank exposures.

The risk of contagion between large companies or foreign banks and the major Swedish banks is moderate. Given the same assumptions as in the test above, the counterparty is a large company or a foreign bank in half of the cases when one bank becomes insolvent. From the second half of 2004 up to 2006, however, in no case would a suspension of payments by any of these counterparties have led to a Tier 1 capital ratio below 4 per cent for any major Swedish bank.

69 The Riksbank has been collecting data on the 15 largest counterparty and settlement exposures of the major banks since 1999.

70 This proportion represents a situation where a major bank or a large company suspends payments with immediate effect and no prior warning and the possibility of recovery is judged to be comparatively slight. The resultant levels of Tier 1 capital should therefore be seen as outcomes of an extreme stress test.

The major Swedish banks compared with other major Nordic banks

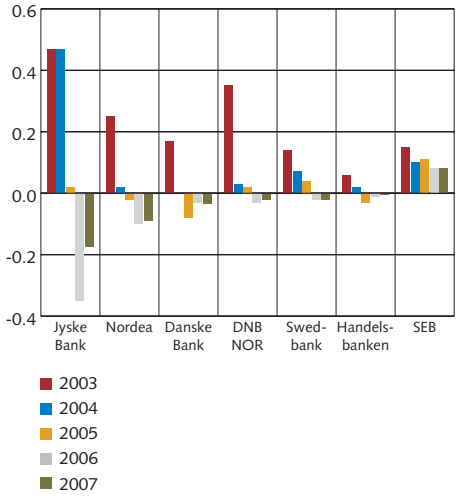
The profitability of the other Nordic banks is slightly below the level for the major Swedish banks (see Chart 3:14). In the latest four-quarter period their return on equity tended to decline; it was virtually unchanged from the summer of 2005 to the autumn of 2006 and then fell in the latest two quarters. The increase in the profitability of the Swedish banks slackened in the latest quarters but did not turn downwards as in the other Nordic banks.

Net interest income is now growing faster than net commission income in the other major Nordic banks. The most expansive income item in the latest four-quarter period was net interest income, which rose 15 per cent (see Chart 3:15). Lending growth was strong, as it was for the major Swedish banks, but for the other Nordic banks the pressure on margins seems to have eased to some extent. In the latest four-quarter period, net commission income developed negatively in the other Nordic banks. The average rate of increase was about 10 percentage points lower than for the major Swedish banks.

Reversals and recoveries exceeded new loss provisions (see Chart 3:16). This is mainly explained by reversals of earlier group provisions. The banks attribute this to the favourable economic climate for borrowers in Denmark and Norway.

Capital targets were lowered by the other Nordic banks during the latest four-quarter period. This is evident from the banks' quarterly reports, which refer to a lower relative level of risk exposures. That is mainly due to a more favourable assessment of borrowers' overall debt-servicing ability and assets. Moreover, the banks have become more diversified as a result of their expansion organically as well as through acquisitions. In view of the new capital adequacy rules, however, this does not necessarily mean that the banks will reduce their reported Tier 1 capital ratios initially (see under Capital). At the end of the latest four-quarter period, the Tier 1 capital ratios of the other Nordic banks were between 6.8 and 9.7 per cent (see Chart 3:17).

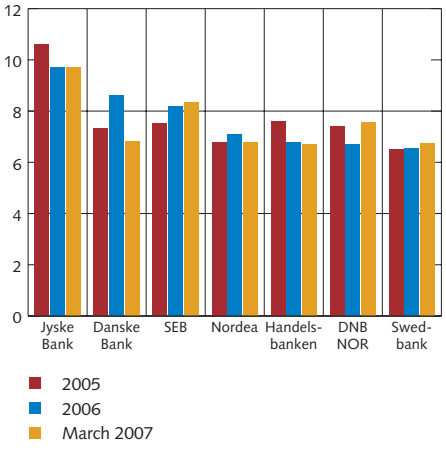
Chart 3:16. Net loan losses in relation to loan stocks for the major Swedish and other Nordic banks
Per cent



Note. The data for 2007 refer to the latest four-quarter period.

Sources: Bank reports and the Riksbank

Chart 3:17. Tier 1 capital ratios of the major Swedish and other Nordic banks
Per cent



Note. March 2007 includes either total or 50 per cent of profits.

Sources: Bank reports and the Riksbank

Stress tests of bank resilience

For financial stability it is crucial that systemically important banks are in a position to withstand unexpected shocks. In order to measure resilience, the Riksbank has developed a method for gauging banks' credit risks, which are by far the largest type of risk. The method uses an existing and readily available portfolio model together with information from the banks' financial statements.[71]

The model provides a measure of the capital required for credit risk in a particular loan portfolio. The calculated capital requirement mirrors the credit risk and can be related to the bank's existing Tier 1 capital.[72] This results in what the Riksbank calls cover for credit risk.[73] A credit risk cover of 100 per cent means that Tier 1 capital exactly covers credit risk, but not other types of risk in the bank's operations. A credit risk cover above 100 per cent means that the bank has a buffer that can be used to cover other types of risk as well as an increased credit risk. The larger this buffer, the greater is the bank's resilience to unforeseen events.

The effects of two alternative scenarios on the banks' credit risk cover are studied here. The scenarios start from the composition of the banks' loan portfolios at end 2006.

- Scenario 1 concerns a general deterioration of the creditworthiness of exposures in the Baltic states.

- Scenario 2 concerns a cyclical downturn that leads to a loss of creditworthiness for all borrowers.

SCENARIO 1: IMPAIRED CREDIT QUALITY IN THE BALTIC STATES

The effect of a loss of creditworthiness among borrowers in the Baltic states is studied with a scenario that runs for three years. The creditworthiness of borrowers in the Baltic states is assumed to decline successively. This increases the probability of default and thus leads to more expected loan losses and a higher capital requirement for the banks. The scenario assumes that the probability of default among borrowers in this region rises in year one to 5 per cent, in year two to 10 per cent and in year three finally to 20 per cent. Year three represents a very extreme situation. The creditworthiness of other borrowers in the banks' loan portfolios is assumed to be unchanged.

The scenario also assumes a reduction of earnings from the Baltic states, by half from the annual level in 2006 in year one, by

71 For a fuller account, see the article on pp. 75–88 in Financial Stability Report 2006:1 and the section on stress tests (pp. 47–50) in Financial Stability Report 2006:2, both Sveriges Riksbank.

72 Note that a bank's Tier 1 capital is dimensioned not only for credit risk in the bank's portfolio but also to cover market risk and operational risk. The amount of capital is also a matter for the shareholders to decide.

73 Credit risk cover = Tier 1 capital/capital requirement for credit risk.

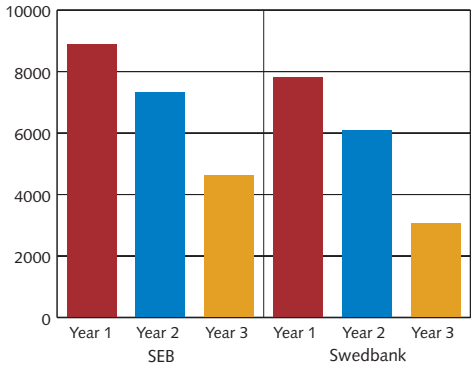
another 25 per cent in year two and to zero in the final year three. Earnings from other operations are assumed to be unchanged. The scenario is applied to Swedbank and SEB, the two Swedish banks with substantial lending operations in the Baltic states.

Notwithstanding this deterioration, bank profits are positive in all three years. This is because earnings more than offset the new provisions for loan losses (see Chart 3:18).[74] Each year, a positive profit is added to Tier 1 capital, which accordingly grows.

The test shows that the banks cope with a marked loss of creditworthiness among their Baltic borrowers, albeit with a smaller buffer for future negative events. Besides the need for increased provisions, the higher risk in loan portfolios requires the banks to hold more capital. Chart 3:19 shows the capital requirement for credit risk in relation to the banks' Tier 1 capital in each of the three years. In every year the cover for credit risk is above 100 per cent for both banks.

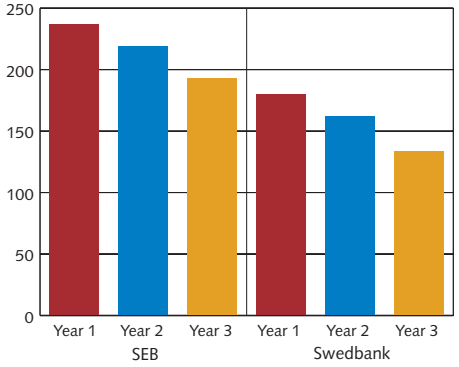
Resilience to a deterioration in the Baltic states is lower than in earlier years. The increased vulnerability to such a development has to do with the growth of lending to this region and the growing proportion of earnings that is generated there. However, the credit risk model does not allow for the fact that increased lending to the Baltic states presumably entails a larger number of new borrowers. and thus a potential effect from diversification.[75] The diversification effects vary with the type of scenario that is tested. In the event of a systemic shock that applies to all borrowers, the effect of diversification would be of little or no importance.

Chart 3:18. Bank profits with the scenario for the Baltic states
Expected profit less the change in expected losses, SEK million



Sources: Bank reports and the Riksbank

Chart 3:19. Cover for credit risk with the scenario for the Baltic states
Per cent



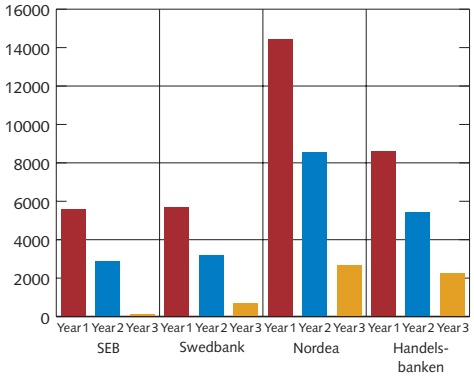
Sources: Bank reports and the Riksbank

SCENARIO 2: IMPAIRED CREDIT QUALITY FROM A TURN IN THE CREDIT CYCLE

The second scenario illustrates how a turn in the credit cycle and hence a loss of creditworthiness affects the major banks. The historical relationship between GDP growth and default probabilities can be used to form a picture of the levels of default probabilities for the banks' borrowers in different phases of the business cycle.[76] In the period from June 2000 to September 2001, GDP growth dropped from over 5 per cent to less than half of one per cent. The marked slowdown meant that in this period the average corporate default probability more than doubled. In March 2003 the average probability level was four times higher than in 1999. In this scenario, default probabilities for all borrower categories are assumed to double

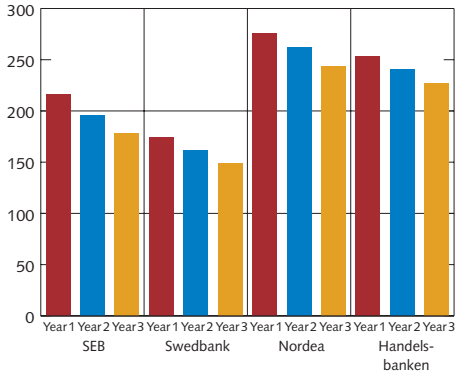
74 Increased provisions for loan losses is derived from the annual change in expected losses.
75 A simultaneous suspension of payments by all borrowers is highly improbable, so more borrowers increases the effect of diversification.
76 GDP growth for Sweden is compared with the average default probability for the Swedish banks' loan portfolios.

Chart 3:20. Bank profits in the scenario with a turn in the credit cycle
Expected profit less the change in expected losses, SEK million



Sources: Bank reports and the Riksbank

Chart 3:21. Cover for credit risk in the scenario with a turn in the credit cycle
Per cent



Sources: Bank reports and the Riksbank

in year one, followed by a further loss of creditworthiness in that the probabilities have trebled in year two and quadrupled in year three. Another assumption is a 25 per cent fall in earnings in each of the three years.

The test shows that the banks are in a sound position to withstand an economic slowdown like that in 2000. Tier 1 capital grows in the first two years for all the banks because although earnings fall sharply, they still exceed provisions (see Chart 3:20). The credit risk cover is sufficient for all four major banks to cope with a quadrupling of default probabilities. However, the capital buffer is reduced in every case and so, therefore, is resilience to further negative events. Chart 3:21 shows the banks' Tier 1 capital in relation to the calculated requirement for capital risk in each of the three years; the cover for credit risk is above 100 per cent for all the banks in every year.

The resilience of all but one of the major banks to such an economic slowdown is unchanged from the previous year. For one bank there is some improvement. While the growth of loan portfolios has contributed to a somewhat higher capital requirement for credit risk, this is balanced in the first place by increments to Tier 1 capital and also by the improvement in profitability. An adjustment in the number of borrower groups in the Baltic states would presumably strengthen resilience by reducing the capital requirement for credit risk (see scenario 1).

Summary assessment of developments in the major banks

- The Riksbank considers that the major banks' capacity for managing unexpected events remains sound. Some improvement in profitability is accompanied by risks that appear to be relatively limited, although expansion in Eastern Europe does entail certain risks.

- The improvement in profitability comes mainly from increased securities-related commissions and that in turn is a consequence of increases in stock-market prices and turnover.

- A further improvement in bank profitability probably requires a continued increase in equity prices and sustained stock-market turnover. The future growth of net interest income requires a continued expansion of lending and higher deposit margins.

- Recoveries and reversals exceeded provisions for new loan losses, so the outcome for the item loan losses added to profits.

- Given the Riksbank's economic scenario, there is little probability of a marked increase in the major banks' loan losses. But the Riksbank does perceive a continued risk in the growth of lending in the Baltic states. There are signs, moreover, that margins on corporate lending are narrowing; a continuation of this tendency may mean that banks are taking greater risks.

- Tests of the banks' counterparty exposures show that in the second half of 2006 the risk of contagion between the major banks was higher than in the previous half-year. In relation to a longer period, however, the risk of contagion can be said to be low.

- The Riksbank has applied stress tests to two scenarios, of which one assumes a worsening of credit quality in the Baltic states and the other a turn in the business cycle that impairs the creditworthiness of all borrowers. The tests show that the banks are left with a buffer, which indicates sound resilience, even when less remains to cope with further negative events.

The financial infrastructure

The Riksbank's annual assessment shows that Sweden's financial infrastructure is of a sound international standard. There are, however, some minor weaknesses that need to be rectified.

Sweden's financial infrastructure is assessed regularly by the Riksbank. The 2006 assessment is summarised here.[77]

The Riksbank's oversight and assessment of the financial infrastructure is an important component of the Bank's work on financial stability. The financial infrastructure includes the institutions and systems that enable payments and financial transactions and is accordingly a central component of the payment system. The Riksbank's oversight involves identifying weaknesses in the infrastructure that may either lead directly to disruptions in the financial system or contribute to problems for one participant or sub-market spreading to others.

The Riksbank's assessment is based on international recommendations, drawn up by the Bank for International Settlement's Committee for Payments and Settlement Systems (CPSS) and the International Organisation of Securities Commissions (IOSCO), financial supervisory authorities' international umbrella organisation.[78] Besides overseeing Sweden's infrastructure, the Riksbank cooperates in the oversight of the international systems CLS[79] and SWIFT[80] by participating in international groups headed, respectively, by the Federal Reserve and the Belgian central bank. The present account is confined to the Riksbank's oversight of the Swedish institutions.

The Swedish systems assessed by the Riksbank are RIX, VPC, the Stockholm Stock Exchange as a central counterparty, and BGC. Each institution is presented briefly below.[81]

- RIX, the Riksbank's system for the settlement of payments, is the hub of Sweden's financial infrastructure. This is because all banks have access to RIX accounts and all payments between banks are settled via these accounts.[82] Besides the major Swedish banks, RIX participants include the National Debt Office, VPC, the Stockholm Stock Exchange and a number of foreign banks, including the CLS. The Riksbank has a dual role in the RIX system, which it both operates and oversees.

77 The assessments are published in full on the Riksbank's website, www.riksbank.se.
78 The BIS Core Principles for Systemically Important Payment Systems are applied in the assessment of the RIX system and BGC, while Recommendations for Securities Settlement Systems, drawn up jointly by BIS and IOSCO, are applied for VPC. The Stockholm Stock Exchange is assessed in accordance with Recommendations for Central Counterparties, also drawn up by BIS and IOSCO.
79 Continuous Linked Settlement
80 The Society for Worldwide Interbank Financial Telecommunication.
81 For a detailed account of the institutions and the reasons for their relevance for systemic stability, see Financial Stability Report 2006:1 and the annual publication The Swedish Financial Market, both of which are available on the Riksbank's website, www.riksbank.se.
82 At present only SEK payments are settled in RIX.

Conflicts between the two roles could give rise to problems of credibility. The Riksbank has, however, separated the tasks in its organisation.

- VPC is the central Swedish institution for the safekeeping and registration of securities. VPC also settles transactions in Swedish equity and interest-bearing securities. In addition, the VPC system manages the pledging of securities.

- The Stockholm Stock Exchange is a marketplace for trading in equity, derivative instruments and, to some extent, interest-bearing securities. The Stockholm Stock Exchange also functions as a clearing house and central counterparty for derivative instruments. As central counterparty the Exchange acts as seller in relation to all buyers and as buyer in relation to all sellers. This means that, instead of having to assess the creditworthiness of all counterparties, it is sufficient for a market participant to monitor the creditworthiness of the Stockholm Stock Exchange.

- BGC, owned by banks, is the central intermediary of retail payments between Swedish banks' customers. The system is mainly used for giro payments and bank-account transfers. BGC also handles debit transactions (transactions initiated by the recipient as opposed to the sender of a payment).

- CLS is an international system for clearing and settling foreign-exchange transactions. It aims to eliminate the risks that arise when foreign exchange transactions between banks in different countries do not occur simultaneously, as can happen if they are in different time zones. In other words, CLS serves to remove the risk a bank takes when one currency has to be delivered ahead of the delivery of the other currency.[83]

- SWIFT is a Belgian company that supplies message services to more than 7500 financial institutions in 202 countries. A majority of the messages mediated by SWIFT concern information about interbank payments. SWIFT also supplies message and communication services to an increasing number of infrastructure systems, including RIX and CLS.

83 The system was initiated in 2002 by some of the world's leading foreign-exchange banks. The Swedish krona has been a participant since September 2003. The other currencies in the CLS system are: US, JPY, Euro, GBP, CAD, CHF, DKK, NOK, HKD, SGD, KRW, ZAR, AUD and NZD. For a discussion of risk management in the foreign exchange market, see Financial Stability Report 2001:2, Sveriges Riksbank.

Result of the Riksbank's assessments

The latest assessments show that the Swedish systems are of a sound international standard. But there are a number of minor weaknesses that need to be rectified. They concern legal risks, transparency and control of participants. The Riksbank's evaluation of the four institutions is summarised in the following (see also Figure 4:1). One of four marks is assigned to each recommendation: Observed, Broadly observed, Partially observed, and Non-observed.

Figure 4:1. Evaluation of the financial infrastructure

	RIX	VPC	SB	BGC
Legal risk				
Transparency				
Financial risks				
Settlement risks				
Operational risks				
Efficiency				
Access				
Control				

Observed		Partially observed	
Broadly observed		Non-observed	

Legal risk is the risk of an institution or participant incurring unforeseen financial exposures because of obscurities in laws and/or rule systems.

Transparency requires an institution to provide its participants with adequate information for decisions about costs and risks associated with participation.

Financial risks are certain risks of a general nature that are unconnected with the settlement process and its risks and may be incurred by institutions or participants. Examples are system rules or routines whereby financially or organisationally weak participants are able to operate in the system.

Settlement risks arise in securities trading or other financial transactions, for instance when delivery of securities does not coincide with payment.

Operational risks are risks of losses arising directly or indirectly from inadequate internal routines, the human factor, faulty systems or external events.

Efficiency refers to an institution meeting participants' needs in a cost-effective manner.

Access refers to criteria for participation being objective, publicly known and entitling anyone who meets them to qualify for participation.

Control of institutions is to be transparent. The rights and obligations of the directors, owners and participants, as well as decision-making procedures, are to be explicit.

RIX

RIX fully observes all but one of the international recommendations. The Rules and Regulations should be updated with a correct description of every function in the system. The current Rules and Regulations do not cover every function. Moreover, for full observance of the transparency recommendation, decisions in accordance with the Rules and Regulations should be documented and published so that they are accessible for the general public and potential participants.

The Riksbank has, moreover, identified a number of areas for further improvement. They do not affect the mark, however.

Operational security can be improved as regards system operation and dependence on personnel. The Riksbank considers that the task of moving system operations should be exercised jointly with system participants. At present, the Riksbank is the only participant that practices this. It is also important to minimise dependence on key personnel at every level. The Riksbank also notes that payment traffic is excessively concentrated to a certain time of day. The system is dimensioned technically for this load, which entails higher operating costs. A more even flow over the day is desirable.

The Riksbank will be introducing a new technical system to replace the existing RIX system in the autumn of 2007. The new system will have a greater capacity than its predecessor and will include liquidity optimising functions that enable participants to reduce liquidity exposures. That in turn lowers the cost of making liquidity available. These functions can improve the system's safety and efficiency.

VPC

VPC fully observes all the recommendations for the assessment. Moreover, transparency has been increased by publishing a sample of prices on the website.[84] That has made it even easier for participants to estimate their total costs.

The Riksbank notes, however, that too few commercial banks function as liquid banks[85] in the VPC system. This leads to a concentration of exposures to the liquid banks, with a high risk of contagion. Participation in the RIX system is a requirement for becoming a liquid bank in the VPC system and that in turn entails high costs and relatively stringent entry requirements. When the present RIX system is replaced in the autumn of 2007, the Riksbank will introduce more flexible forms for participation and a more flexible structure of fees, the aim being to facilitate participation in the system.

The assessment also shows that the percentage of equity transactions settled on the appointed day is high but declining. The reason for the decline is that recently participants have not consistently delivered liquid equities.[86] At present, refraining from delivering such equities costs less than borrowing them because there are no sanctions for late delivery. VPC is working actively, however, together with system participants, to construct solutions whereby non-deliverers incur an additional cost. In the fixed-income market, the level of settlement was broadly unchanged from 2005.

The 2006 assessment of VPC was made jointly with Finansinspektionen. It is accordingly based on the regular work of

84 The European Code of Conduct for Clearing and Settlement Systems states that clearing and settlement systems in Europe are to have clearer price lists and publish samples of prices.
85 Liquid banks work on behalf of the clearing members and participate in the settlement of liquidity. They have their own accounts in the RIX system.
86 Previously, non-delivery was confined to illiquid equities.

both authorities with VPC and on joint interviews with a sample of participants in the VPC system.

THE STOCKHOLM STOCK EXCHANGE

The Stockholm Stock Exchange fully observes the recommended requirements for acting as a central counterparty and clearing organisation for derivative instruments. The Exchange's technical system for trading and clearance of derivatives is characterised by high security. But there is still room for improvements.

The Stockholm Stock Exchange does not have access to the identity of end-customers, which can be a problem. It adds to the uncertainty in the Exchange's risk assessments in the case of its own exposures to third parties. The Riksbank therefore recommends that the Stockholm Stock Exchange intensify the work of gaining access to the identity of counterparties in order to reduce the uncertainty connected with risk assessment. One way could be for the participating banks, which are aware of the end-customer's identity, to supply the Exchange with relevant information. This applies in particular to the counterparties that lie behind the largest exposures.

Since the 2005 assessment the Stockholm Stock Exchange has improved the provision of information, for instance by introducing a new, user-friendly website. Unlike the case earlier, the Exchange now fully observes the recommendation about transparency. There are, however, further demands that can be made in this respect. Transparency is particularly important for a central counterparty because market participants must be in a position to assess the risks in their exposures to it. In the case of the Stockholm Stock Exchange, moreover, although the end-customers have a direct relationship with the Exchange as the central counterparty, they are not neccesarily professional agents. The assessment therefore calls for additional data on the undertakings of the Stockholm Stock Exchange, for instance the value of pledged securities, statistics and system access data. Moreover, the description of the Exchange's undertakings for the delivery of securities should be clarified, for example in the information to the general public.

The Stockholm Stock Exchange, like VPC, was assessed jointly by the Riksbank and Finansinspektionen.

BGC

The assessment of BGC shows that the system does not fully observe the international recommendations in three respects: legal risk, transparency and access. Transparency and access recur from the 2005 assessment, while some weaknesses in the regulatory framework have led the Riksbank to lower the BGC's mark for legal risk.

The Riksbank considers that BGC's regulatory framework should be clarified. It does not clearly specify either when a transfer shall be considered to have entered the system or when a transfer can no longer be revoked by a participant. These matters are so central that they should be set out distinctly in the agreement between BGC and the participant. Work is in progress on a revision of BGC's current agreement and it will probably deal with the obscurities.

Full observance of the transparency recommendation calls for greater clarity about the consequences of non-payment. At present, participants that cannot meet commitments have various courses of action. The Riksbank considers that there should be a rule that states which alternative is acceptable. That would reduce complexity and heighten participants' understanding of risks. In other respects, BGC's agreement with participants is generally clear. It gives participants a fair chance of understanding the financial risks associated with participation in BGC's system.

Regular checks are lacking of whether participants fulfil the criteria for participation. An initial check is made when a new participant joins the system but the Riksbank considers that it should be followed up at regular intervals, for instance each time the main agreement is renewed. A step in this direction was taken at the turn of 2006 when the revised main agreement for the Bankgiro came into force. This stipulates that BGC is to conduct an annual check that all participants meet the entry criteria.

Summary assessment of the financial infrastructure

With a few exceptions, all the institutions the Riksbank oversees fully observe all the international recommendations. All the evaluated Swedish institutions maintain high levels of security and efficiency. Since the first IMF assessment in 2001, the Swedish institutions have endeavoured to fulfil the recommendations and meet the additional demands placed on them by the Riksbank in its comments.[87] The matters where systems do not fully observe the recommendations include transparency at RIX and BGC. Neither does BGC fully observe the requirements concerning legal risk and entry. As in 2005, VPC fully observes all the recommendations. The Stockholm Stock Exchange, which did not fully observe the transparency requirements previously, has been upgraded now that it has improved the public information.

In an international perspective the performance of the Swedish systems is sound, as expected. Other countries that assess their systems use the same recommendations. Their application, however, is liable to vary with the country's market conditions.

87 For an overview of the IMF's assessment, see Financial Stability Report 2001:2, Sveriges Riksbank.

PART 2. ARTICLE

Effects of increased foreign ownership in the bank sector

The European banking landscape is changing. A number of major European banks have expanded by acquiring banks abroad. Sooner or later, some sizeable Swedish bank may be targeted for a foreign takeover. The question is what the consequences would be for the Swedish banking system and how Swedish authorities should relate to such a development.The conclusion in this article is that there is no reason to fear any dramatic consequences of a sizeable foreign presence in the Swedish bank market. If anything, the effects should be beneficial for both the efficiency and the stability of the bank sector. On the other hand, supervision and crisis management with a cross-border bank can be complicated. The best way of addressing such challenges is with increased cooperation between national authorities. Additional restrictions on and less openness to foreign ownership would be the wrong approach.

Swedish banks' ventures abroad

Expansion abroad began early for the four largest Swedish banks: Handelsbanken, Nordea, SEB and Swedbank. As a result of their acquisitions abroad since the mid 1990s, more than half of the combined assets is now located abroad, mainly in other Nordic countries but also in Germany, Poland and the Baltic states. The share of their combined operating profit that is generated abroad is almost as large. In the case of the Nordea Group, which has large segments of its operations in Denmark, Finland and Norway as well as Sweden, the share amounts to no less than three-quarters. All the major Swedish banks now define their home market as Northern Europe.

In earlier phases of the banks' expansion abroad the emphasis tended to be on financial centres such as New York, London, Luxembourg and Singapore, while the supply of services was often aimed at foreign investors and large Swedish companies. The latest wave of ventures abroad is focused closer to home and the customers are local companies and households to a greater extent than before. In other words, the emphasis is on retail rather than wholesale banking.

Cross-border acquisitions of this type started relatively early in the Nordic and Benelux countries compared with the rest of Europe. The rather tough restructuring that occurred in the aftermath of Sweden's bank crisis was certainly one factor behind the Swedish banks' drive abroad. When the home ground had been consolidated, for the remaining banks the only way ahead lay in expansion elsewhere. Consolidation also gave these banks the size that is needed to accept the challenge that an international effort normally represents.

In recent years, similar enterprises abroad also seem to have got under way among banks in other parts of Europe. This development will hardly die out. The Swedish government is explicitly intent on disposing of the state-owned holdings in Nordea and the considerably

smaller bank SBAB, for instance. Such a sale would probably attract foreign as well as Swedish interests. An increased foreign influence in the Swedish bank market therefore seems to be not entirely unlikely. That raises questions about the consequences for the Swedish banking system and how Swedish authorities should relate to such a conceivable development.

Some of the changes in the European banking landscape and their driving forces are described in the next section, followed by a section on some of the foreign entries to date in the Swedish market. The effects of foreign ownership – general experiences and specific consequences for the Swedish bank market – are then discussed. After that, some complications for supervision and crisis management that can arise from increased cross-border banking are considered. Finally, the Riksbank's conclusions are presented.

A changing European banking landscape

The number of banks in the EU has steadily fallen in recent years.[88] There has been substantial consolidation inside national borders, particularly in Italy and Germany. In the period 1993–2003 around 80 per cent of all acquisitions and mergers were in home markets. In the last couple of years, cross-border integration has picked up. To a greater extent than before, moreover, it has involved banks that offer retail services rather than, as before, those that mainly provide for professional players and large companies. The amounts involved in the acquisitions have grown with the mergers of some truly large banks. Examples are the Spanish Banco Santander's takeover of British Abbey National in 2004 and Italian Unicredit's acquisition of German HypoVereinsbank, not least its subsidiaries in Austria and Poland in 2005. Dutch ABN Amro acquired Italian Banca Antonveneta in the latter year and in 2006 French BNP Paribas took over Italian BNL. In March 2007 discussions were under way on a takeover of ABN Amro by British Barclays.

In many respects the series of acquisitions and mergers is already leaving its mark on the European banking landscape. This is evident not least in the growing share of bank assets outside the home country. However, the impact of this development on the structure of bank markets differs greatly from country to country. To clarify the picture of changes in the banking landscape it may be a good idea to distinguish between inward and outward internationalisation.

BANKS' PRESENCE OUTSIDE THE HOME COUNTRY

Outward internationalisation from a country refers here to the extent to which one country's banks have established branches and subsidiaries in other countries.

88 From end 2001 the number of credit institutions in the EU25 area declined by 11.5 per cent to 8622 at end 2005 (EU banking structure, European Central Bank, September 2006).

As mentioned above, Swedish banks display a relatively high degree of outward internationalisation. Elsewhere there are considerably larger banks that are at least as internationalised as those in Sweden. Some large bank groups in the EU that have at least half of their consolidated assets outside the home country are French Crédit Agricole and Société Générale, British HSBC, Dutch ING Bank, Italian Unicredit, Spanish Banco Santander and Belgian Dexia.

On a countrywide basis, the degree of outward internationalisation is notably high in, for instance, Sweden, Belgium, the Netherlands, Italy and Spain. In the case of each of the bank groups Dexia and Fortis (Belgium), ING Bank and ABN Amro (Netherlands) and Nordea (Sweden) the value of the external assets is equivalent to between 50 and 75 per cent their home country's GDP.

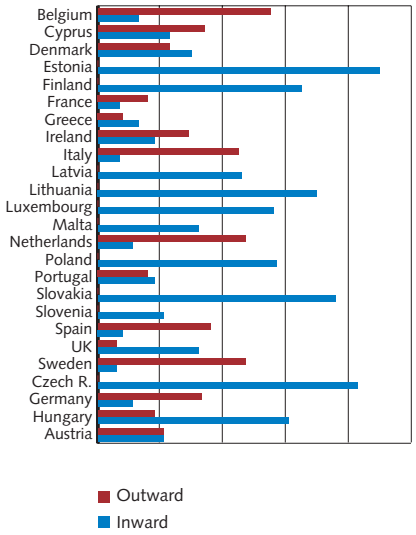
FOREIGN PRESENCE IN BANKS' HOME COUNTRIES

Internationalisation can also be considered as an inward process. In terms of a country's market share for branches and subsidiaries of foreign banks, inward integration is highest in EU's new member states. On average, almost 70 per cent of their bank markets is under foreign management, with a large presence of banks from other EU countries. In Estonia, where Swedish-owned banks predominate, the share is as high as 90 per cent. For comparison, in the countries in the euro area the average proportion of bank assets that are under foreign management is around 16 per cent.

In absolute terms, the United Kingdom stands out among the EU countries as a location for foreign banks. London's position as a financial centre has prompted many banks to establish wholesale operations there. The assets of foreign branches and subsidiaries in the United Kingdom total over 6,000 billion euro, twice the country's GDP. Luxembourg, one of the smaller EU countries, aims to attract financial companies and there the assets of foreign banks total around 750 billion euro or almost twenty times the country's GDP (the figure for Sweden is about 10 per cent of GDP).

Chart 1 shows the degree of outward and inward integration in the European banking sector. Outward integration is represented by the proportion of the assets of bank groups based in a country that is located in other EU25 countries and thus does not include assets outside EU25. Inward integration does include the presence of banks from non-EU countries, so the two indicators are not entirely comparable. The chart shows that integration as a whole is most advanced in the new as well as the small earlier member states. High outward integration is only natural in small countries because banks there are obliged to expand elsewhere in order to match the economies of scale that are available to banks with a large home market.

Chart 1. Outward and inward integration in the EU25 bank sector at end 2005



Note. Outward integration is represented by the share of the country's bank groups' assets that is located in other EU countries, inward integration by the share of a country's domestic bank market that is held by foreign banks (including banks from non-EU countries). The countries are listed in their Swedish alphabetical order.

Sources: ECB and the Riksbank

MANY DRIVING FORCES FOR CONTINUED INTEGRATION

A variety of motives no doubt lie behind the recent years' takeovers in the European bank market. Many forces are clearly working for increased cross-border consolidation.

- Potential access to new and hopefully more profitable markets, particularly if the home market is mature, is one important reason why banks expand abroad. The combination of strong economic growth and a financial sector that is usually less well developed gives a strong potential for expansion in the new member states, above all in Eastern and Central Europe.

- Technology has increased the potential for utilising economies of scale and synergies. When IT expenditures account for a growing share of a bank's fixed costs, economies of scale are particularly relevant. That was one of the explicit reasons for the merger of Banco Santander and Abbey National, for example.

- The new capital adequacy standards enable a bank to calculate capital requirements with increasingly advanced risk models.[89] At the same time, the cost of the new risk models can result in economies of scale that strengthen the case for consolidation.

- Banks' risk profiles can be improved by increasing the geographical diversification of the risks in loan portfolios.

- The massive efforts to create a proper internal market in the EU have also been important. One such effort is the EMU project, which has led not least to a number of significant deregulations and the removal of numerous barriers to the free movement of capital. The existence of the euro has been instrumental in reducing exchange risk and in facilitating cross-border marketing and price comparisons of financial services in different countries.

- Another aspect of these efforts is the work that has been done on harmonising financial regulations in the EU. The Financial Services Action Plan, launched in 1999, has resulted in some forty harmonisation measures, mostly in the form of new legislation, the aim being to facilitate a cross-border supply of financial services.

- Harmonisation in turn has been speeded up by a new, less drawn-out legislative process, the Lamfalussy process. In this way, the average interval between a proposal and a joint

89 Directive 2006/48/EG from the European Parliament and Council on the right to start and conduct operations in credit institutions (amended).

decision on new EU directives has been shortened to less than two years. Moreover, the process enables legislation to be more flexible and adaptable, which probably also benefits integration.

- Harmonisation has also been accompanied by increased cooperation in financial supervision and an endeavour to make supervisory methods more uniform. This hopefully stimulates integration by reducing the burden of regulations on cross-border banks.

Few foreign entries in the Swedish bank market

The first establishments in Sweden by foreign banks occurred in 1986, when foreign banks were permitted to set up subsidiaries here. In 1990 foreign banks were also permitted to open branches in Sweden. Since then the number of foreign banks with a presence in Sweden has risen to 25 (end 2006).

Most of the foreign banks in Sweden focus on the corporate and securities markets. A notable exception in the retail sphere is Denmark's largest bank, Danske Bank; through the acquisition of Östgöta Enskilda Bank in 1997 and the establishment of a number of provincial banks, this is now the largest foreign bank in Sweden. With some fifty branches here and market shares of over four per cent of lending to and around six per cent of deposits from the Swedish general public, Danske Bank is now the fifth largest bank in Sweden.

Another example of entries to the Swedish market for financial services concerns Old Mutual, originally a South African group which now has its head office in London. In 2006 Old Mutual acquired a Swedish financial group, Skandia, with Sweden's second largest life assurance and mutual fund operations (over 20 per cent of the total stock of these assets). The group also includes SkandiaBanken, which has just over one per cent of the loan market and three per cent of the deposit market, making it the seventh largest bank in Sweden (after the four major banks, Danske Bank and SBAB).

Notwithstanding these foreign entries, the degree of inward integration is still relatively low in Sweden, as shown in Chart 1. Emerging markets normally provide a larger potential for the growth of foreign banks than mature markets such as Sweden. It would therefore seem to be more profitable to expand in other parts of the world. Even so, certain factors suggest that an increased foreign interest in Swedish banks cannot be ruled out. The profitability and customer networks of the Swedish banks may be attractive, as may the large stock of investment assets that results from the banks managing sizeable segments of people's mutual fund and pension savings. Another inducement may be the presence of Swedish bank groups in emerging markets. If the government's intentions of disposing of the state-owned holdings in Nordea and SBAB are

realised, this may well attract investors abroad as well as in Sweden. Many of the major international banks have adequate resources, not least large cash reserves, for the acquisition of a major Swedish bank. This naturally raises a number of questions about the possible consequences of such a development for the Swedish bank market.

Foreign bank-ownership can affect competition as well as stability

The primary socioeconomic dimension of increased foreign ownership is, for most sectors, how the competition is affected in the domestic market. Competition is important because it promotes efficiency and that in turn promotes growth and prosperity. The bank sector, however, differs from other sectors, such as the automobile industry, because of its special role in the financial system. Structural changes in the bank sector are therefore a little more complex to assess than changes in other markets.

The main point to consider is the banks' key role in the payment system. On account of this role, there are times when the banks' mutual exposures are very large and a problem in one bank is then very liable to spread to other banks and to other parts of the financial system. As the social costs of a crisis in the financial system are potentially very great, financial system stability is a major public interest. That is one reason why banking operations are regulated separately and supervised by Finansinspektionen, Sweden's financial watchdog. It also means that monitoring and analysing developments in the bank market is a natural part of the Riksbank's function of promoting a safe and efficient payment system. Consequently, the effects of a possible increase in foreign influence must be assessed in the context of stability as well as competition.

For a long time economists have debated whether the public interest in competition is at odds with the interest in bank sector stability. Some economists argue that unduly strong competition may be bad for financial system stability.[90] The underlying mechanism is that weaker competition leads to higher bank profits and thus to a buffer against shocks, so that bank owners have less reason to take excessive risks. Moreover, competition that is too heavy, so that profits are too small, renders the banking system more vulnerable to financial and macroeconomic disruptions. From this point of view, a balance should be struck between the degrees of competition and financial stability to arrive at the situation that is best for society. Other economists argue that, on the contrary, competition results in a more stable banking system.[91] One of the arguments behind this view is that weak competition leads to higher interest rates on lending and that in turn destabilises the bank sector because it leads to a higher risk of default among borrowers.

90 Allen & Gale (2000).
91 Boyd & Nicoló (2005).

Both views are based on rather stylised theoretical models of reality and it is difficult to gauge the reliability of their predictions. There are also some extensive empirical studies but their results are not always easy to interpret, partly because competition and system stability are difficult to measure. A large study by Beck et al. (2005) found that high concentration in the bank sector does not appear to lead to a less stable banking system. On the other hand, the same study shows that banking system vulnerability is increased by regulations that obstruct the entry of new banks and restrict the range of banking operations; this was confirmed by Claessens and Laeven (2004). Schaeck et al. (2006) show that a banking system that is more exposed to competition is less likely to be hit by crises in the financial system. The hypothesis of a conflict between competition and stability is also rejected by Boyd et al. (2006).

Regardless of how one judges the need to balance competition and stability, the consequences of increased foreign influence on the Swedish bank market should be considered in relation to both these public interests. As a first step, let us look at experience in general of foreign entry.

OTHER COUNTRIES' EXPERIENCE MAINLY FAVOURABLE

As a rule, an increased presence of foreign banks and few restrictions on their operations have led to stronger competition in the bank market.[92] Foreign bank-ownership is, for instance associated with narrower profit margins for the domestic banks, particularly in emerging markets.[93] Competition from foreign banks has also helped to improve the quality and accessibility of financial services.[94] Moreover, an improved capital supply has often made it more possible to finance domestic investment.[95] The introduction of new business techniques by foreign banks has benefited the efficiency of the domestic bank market.

At the same time, foreign participants are sometimes criticised for concentrating on the bank market's most lucrative segments in ways that put the domestic banks at a disadvantage. Some studies note that in countries where the bank market is dominated by foreign players, small and medium-sized companies sometimes have poorer access to loans.[96] In some cases this has prompted attempts by the host country's authorities to control the types of operation that are open to foreign players.[97] Other studies have found that a foreign banking presence benefits all companies, though the effects are greatest for large corporations.[98]

92 Claessens & Laeven (2004).
93 Claessens et al. (2001).
94 Levine (1996).
95 Bhattacharaya (1993).
96 Detragiache et al. (2006).
97 Bonin & Ábel (2000).
98 Giannetti & Ongena (2005).

It is not least in Eastern and Central Europe that foreign ownership has played a crucial part in the development of modern banking sytems with institutions that are financially robust and independent. The importance of foreign participation in the privatisation of the bank sectors in Hungary and the Czech Republic, which in turn has been a significant step in the transition from a centrally planned to a market economy, is outlined in the box.

The effects on financial stability also seem to be favourable as a rule, while restrictions on foreign ownership appear to lead to less stability.[99] The impact on financial stability seems to be particularly positive in less developed economies. In such cases foreign banks can often contribute more up-to-date risk management techniques, better accounting routines and structures for corporate governance.[100] The fact that foreign banks often have a larger capacity to absorb risk also benefits financial stability. Moreover, they also tend to be more internationally diversified than domestic banks and therefore less vulnerable to macroeconomic shocks in the host country.[101]

The growing geographical diversification of individual banks does entail an increased linkage between their operations in different countries, with more numerous sources of risk and more channels for these risks to spread in the banking system. There is, not least, an increased dependence on developments in the parent bank's home country. Moreover, increased integration generally means a growing degree of real economic synchronisation between countries. The positive effects of diversification can therefore be smaller than expected.[102]

99 Rajan & Zingales (2003).
100 Cárdenas et al. (2003).
101 Montgomery (2003).
102 De Nicoló et al. (2004).

Foreign bank ownership in Hungary and the Czech Republic[103]

In the centrally planned economies the supply of capital was controlled by the government, often through the central bank. The first step in the reform of the bank sector was therefore to terminate the central bank's role as the supplier of capital and establish commercial banks. This left the central bank with the customary functions, such as conducting monetary policy and overseeing financial stability.

HUNGARY

Hungary was one of the first countries in Eastern and Central Europe to admit foreign investors. As part of its privatisation strategy, at an early stage Hungary sold majority holdings in state-owned banks to foreign investors. First, however, the banks' balance sheets had to be strengthened with additional capital in order to attract the right investors; moreover, as the impaired loans did not show up all at once, this had to be done several times. Still, in time it did prove possible to put the banks on a sound footing and find strategically suitable owners. In this way, Hungary was more successful than many other countries in the region in creating a functional banking structure early on.

CZECH REPUBLIC

The Czech Republic was more averse to foreign influence to start with and the initial privatisations were arranged mainly with domestic investors. The loan portfolios which the newly established commercial banks took over tended to be of poor quality, with a high concentration of risk. Moreover, the transition to a market economy began in a turbulent macroeconomic phase, which made the valuation of loan stocks difficult. New lending was particularly risky in the unstable economic situation and the old routines for granting new credit were allowed to continue as before.

In the absence of pressure for change from foreign owners, privatisation did not result in a stable bank sector. When the true state of loan portfolios eventually became clear it was evident that impaired loans made up a large part of the bank's assets; consolidating the bank sector cost the Czech government an estimated 30 per cent of GDP compared with around 10 per cent in Hungary. Foreign ownership did not become politically acceptable in the Czech Republic until the prospect of EU membership loomed. In the second round of bank privatisation, carried out between 1998 and 2000, majority holdings in the three largest Czech banks were sold to foreign investors. Today, the major part of the bank sector there is under foreign control.

103 For a fuller account of the development of the financial systems in a number of transitional economies, see e.g. Bonin & Wachtel (2003).

UNDRAMATIC CONSEQUENCES FOR THE SWEDISH BANK MARKET

A general assessment is that bank-market entry by foreign banks seems to be largely positive for the host country in terms of the bank sector's efficiency and stability, though it is in less developed economies that the effects are most pronounced. The consequences of an increased foreign presence in the Swedish bank market would probably not be as great. They can be divided into effects on competition and on banking system stability.

EFFECTS ON BANK MARKET COMPETITION

The degree of concentration in the Swedish bank market today is clearly high. Between them, the four major banks have three-quarters of the Swedish deposit and lending markets. These banks are also very profitable. In 2006 their post-tax rates of return were all in the interval 19–22 per cent.[104]

The combination of high concentration and high profits is sometimes said to indicate a lack of competition. Matters are unfortunately not that simple. Measuring competition is difficult, partly because its existence is hard to catch.[105] For one thing, just the threat of new competitors can be sufficient to spur existing players to compete more without the market structure actually changing.[106] Moreover, profits are liable to vary for numerous reasons, such as the macroeconomic climate.[107] The Swedish economy is expanding strongly at present, so high profits are not necessarily evidence of weak competition here.[108]

There are many indications that, if anything, competition in the market for housing finance has grown in recent years; this is mirrored, for instance, in the narrower net interest margin (bank income from lending less expenditure on lending and deposits, all in relation to interest-bearing assets). One explanation, clearly, is that other players, for example SBAB, are competing more offensively with the four major banks for borrowers. The less onerous capital requirements for mortgage loans as a result of the new capital adequacy directive may also have induced many players to increase their presence in this market.[109] Margins on corporate loans have likewise been under pressure recently. There are also signs of increased competition in the deposit market, though it does not seem to have resulted in the same pressure on margins as in the lending market. A large share of

104 The figures are taken from the banks' financial statements.
105 For example, Beck et al. (2005) and Claessens & Laeven (2004) find no empirical support for a link between concentration and competition.
106 Besanko & Thakor (1992).
107 Industrial organisation theory has long stressed the need for other indicators of competition than concentration and profitability; see e.g. Baumol et al. (1982).
108 Interesting studies of efficiency in different bank markets are to be found in Carbó-Valverde et al. (2006) and Bikker & Bos (2006) .
109 Directive 2006/48/EG from the European Parliament and Council on the right to start and conduct operations in credit institutions (amended).

mutual fund and pension saving in Sweden is managed by the banks; with the locking-in effects of the current tax rules, competition in this market is probably not as strong as it could be.

Without an actual case to consider, it is hard to say in advance whether the effect of a sizeable foreign presence on competition in the Swedish bank market would be positive, negative or negligible. The outcome very much depends on the market structure that then ensues. The most probable scenario is an effect that is not particularly great.

For the Swedish authorities, however, an important lesson from the experience in other countries is not to create unnecessary obstacles for foreign competition or a foreign takeover of Swedish banks. Macroeconomic efficiency is a question of directing resources to their most productive use. Those who believe they can run a company more profitably than others are also prepared to pay most for a controlling holding. The threat of being bought up by someone with a better business model or a more efficient management acts as an incentive for existing managements to become more efficient. Such a "market for corporate control" is accordingly essential for economic efficiency.[110] Unwarranted obstacles to or restrictions on the possibility of corporate takeovers lead to a less functional market. That in turn can entail a less efficient use of the economy's resources. As a rule, therefore, limiting the possibility of foreign ownership for various protectionist reasons is not a sound socioeconomic proposition. A properly functioning market for corporate acquisitions is as important for efficiency in the bank sector as it is in other sectors.

EFFECTS ON FINANCIAL STABILITY

Neither do there seem to be any grounds for being apprehensive in advance about dramatic consequences for the stability of Sweden's financial system. A major international bank that takes over a Swedish bank would no doubt have plenty of resources for financial support as well as a portfolio of assets that is more diversified than that of the bank it acquires. The Swedish bank would then, if anything, be less vulnerable to disruptions than the remaining Swedish banks. The latter, moreover, would hardly be more exposed to the resultant subsidiary or branch than they were to the bank before it was taken over. So it is hard to see that increased foreign influence would lead a priori to any direct negative consequences for financial stability.

At the same time there would be the greater dependence on the parent bank and developments in its home country. There is always the possibility of problems arising in a bank. It will be increasingly difficult to prevent cross-border contagion if some component of a bank is in serious difficulties. The situation could be particularly troublesome if an international bank has operations that are critical for the host country but not the home country. For national authorities

110 See e.g. Jensen & Ruback (1983).

it may then be unsatisfactory to have less insight into and control over the bank compared with a domestic bank. This brings us to the division of responsibilities between home and host countries, a matter that in international fora is commonly referred to as the home/host problem.

More cooperation needed to manage crises in cross-border banks

The home country principle, which is the established norm in the EU, makes the home country responsible for the supervision of the parent bank, including its branches in other countries (in this context the home country is the country that issued the cross-border bank's licence). The branches abroad are included in the home country's deposit guarantee system. In the case of bank groups with subsidiaries abroad, the home country is responsible for supervising the group as a whole, while the subsidiaries and deposits in them are the responsibility of the respective host countries. There is also a home/host relationship between authorities in other matters than direct supervision, though without the formal structure that regulates this relationship in supervisory issues. One example is the acute management of a bank crisis that may require liquidity assistance from the central banks. Another is the allocation of costs in the aftermath of a crisis, when finance ministries may be involved.

As long as the cross-border operations of banks were relatively limited, the home country principle generally functioned satisfactorily. The arrangement will probably not suffice, however, as the cross-border element grows and banks' operations are liable to be critical for the financial system in more than one country. This is because of the inherent conflict between the home country being responsible for consolidated supervision and the host country having to shoulder the consequences that problems in a bank may have for financial system stability. What this amounts to in practice is that while the host country authorities are politically accountable for their country's financial stability, cases can arise where they have insufficient insight into and control over the bank in question. For the host country this can be a problem in particular when a bank uses branches for its operations abroad but it applies just as much to banks that use subsidiaries.

Some countries have chosen to adress this problem by simply being rather restrictive about the operations of foreign banks, at least in the form of branches. The models adopted by a couple of non-EU countries, Canada and New Zealand, are outlined in a box.

In EU cooperation, however, more restrictions on the cross-border supply of services are not an option. On the contrary, the removal of barriers is high up on the EU agenda. The chosen approach instead is an increased harmonisation of financial regulations. At the same time, EU cooperation creates conditions for other ways of tackling

the challenges the authorities face from increased integration. In the field of supervision there is now a great deal of cooperation between the member states, for instance in the framework of the Committee of European Banking Supervision (CEBS). Supervisory authorities also have a number of informal networks for the supervision of some cross-border bank groups.

Furthermore, voluntary agreements have been concluded on cooperation for financial stability. A Memorandum of Understanding (MoU) was drawn up in 2005 between supervisors, central banks and finance ministries in what were then the 25 EU member states. It lays down basic structures for the exchange of information and cooperation on crisis management in cross-border banks, together with a foundation for extensive networks between the authorities. Agreements of this kind have become increasingly common and can take various forms: bilateral or multilateral, bank-specific or general, for one or several groups of authorities, and for supervision alone or together with crisis management. Besides the European MoU, the Riksbank has, for example, concluded MoUs with the other Nordic central banks, with the central banks in the Baltic states and with Sweden's financial supervisory authority (Finansinspektionen) and finance minstry.

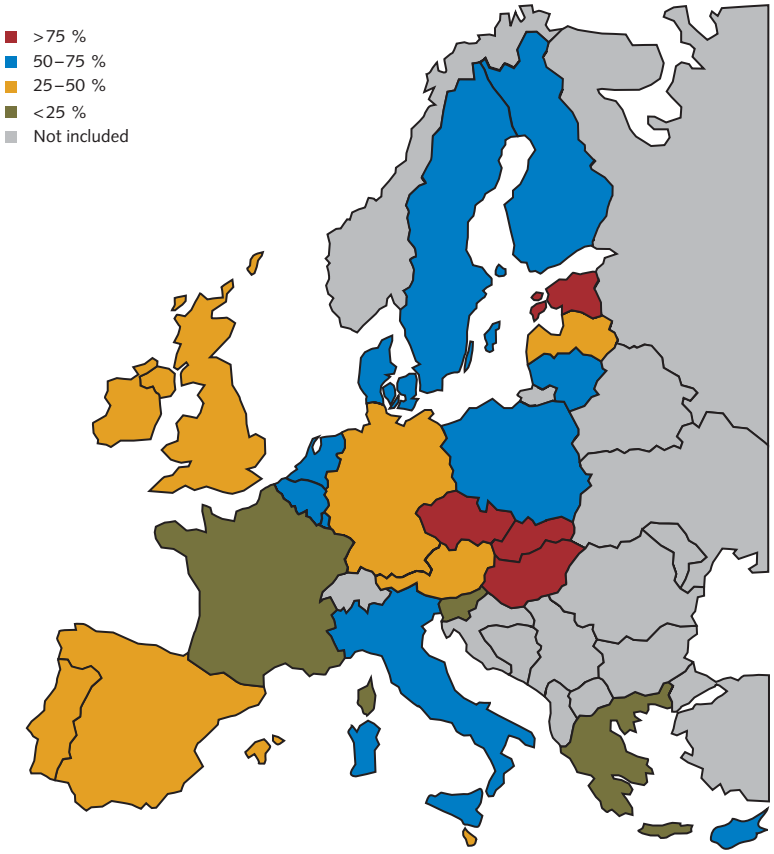
Along with these cooperation agreements, intensive efforts are being made to strengthen the cooperation on financial stability within the frameworks of the EU's Economic and Financial Committee (EFC) and the European Central Bank (ECB). One aspect of this work is to arrive at criteria for joint assessments of potential crises and mechanisms for managing the sharing of burdens arising from a crisis.

However, there are numerous complications to the management of a crisis in a sizeable cross-border bank and many issues and challenges still remain to be solved before authorities with responsibility for financial stability can rest assured.

The degree of integration in the bank sector is presented as the sum of inward and outward integration in Figure 1 (see also Chart 1). The two indicators are admittedly not fully comparable and there are methodological weakness in combining them. But a simple summation can provide a rough indication of the extent to which countries are likely to be affected by the home/host problem. The degree of integration is highest in the countries shown in red and lowest in those shown in green. [111]

111 See e.g. "The financial infrastructure – aspects of the framework for banks in the EU" in Financial Stability Report 2005:2, Sveriges Riksbank, pp. 51–68.

Figure 1. The degree of cross-border integration in the EU25 bank sector at end 2005



Note. The degree of integration is represented by the sum of outward and inward integration, where outward integration is the share of the country's bank groups' assets that is located in other EU countries and inward integration is the share of a country's domestic bank market that is held by foreign banks (including banks from non-EU countries)

Sources: ECB and the Riksbank

Country approaches to foreign-owned banks

A good many non-EU countries with a bank sector that has a high level of foreign ownership have rules that make it easier to handle foreign-owned institutions.

New Zealand

New Zealand, where the bank sector is mainly under foreign ownership, has tackled the problem by prohibiting foreign bank branches in principle. The requirement that every systemically important bank has to be registered as a New Zealand company is intended to result in legal entities that are more manageable than a foreign branch would be. Insisting on a subsidiary structure means that in the event of a crisis, a bank's assets and liabilities can be controlled more quickly and with greater legal certainty. Moreover, given that the subsidiary has a local board, the company is more likely to be run in line with the national interest. It would also be easier to wind-up the operations in New Zealand. At present, all but one of the systemically important banks are registered as New Zealand companies. New Zealand also considers it important that certain banking functions are undertaken inside the country so that they come under the national supervision. To this end, certain restrictions have been imposed on outsourcing.

Canada

Canada used to have a similar ban on branches. In 1999, however, the law was amended to admit foreign bank branches, albeit with substantial restrictions. Above all, branches of foreign banks are not allowed to accept deposits from the general public and may do so from other financial institutions only for a minimum amount of CAD 150,000.

A basic condition for operating a deposit branch is that the bank's global assets total at least CAD 5 billion. This does not apply to branches that do not accept deposits. In any event, a foreign bank has to be under the consolidated supervision of its home country, in accordance with international practice, in a way that is approved by the supervisory authority.

For branches, as for subsidiaries, there is a capital requirement in the form of a deposit. A branch that accepts deposits from financial institutions is required to maintain the equivalent of at least five per cent of its commitments (minimum CAD 10 million) as a deposit in an institution approved by the supervisor. For branches whose operations are confined to lending, the required deposit is CAD 100,000. The supervisor may stipulate that the assets stay in Canada as cover for the branch's commitments.

Conclusions

Experience shows that foreign entries to bank markets are mainly positive for the host country. For the Swedish bank market, the effects of an increased foreign presence would probably not be dramatic. All else equal, the stability of the Swedish financial system would most likely be strengthened. Competition also benefits from an open attitude to foreign entry.

Increased cross-border banking does, however, raise questions to do with the organisation of supervision and crisis management. Above all, the home/host problem has to be handled. But creating barriers to and restrictions on foreign branches, as has been done in some countries, should not be an alternative for Sweden or Europe.

A more integrated market for financial services can substantially enhance efficiency and thereby contribute to higher economic growth in Europe. That has been the main driving force behind the intensive efforts in recent years to harmonise financial regulations in the EU. It is also an important argument for refraining from protectionist solutions to the problems that arise. If many countries were to adopt solutions that entail obstacles to continued integration, economic development in Europe would be endangered. At the same time, problems created by the increased integration must not be ignored. In order to promote financial stability in Europe, cooperation between national authorities must therefore be further developed and intensified.

For Sweden it would, moreover, be natural to promote a symmetric approach to Swedish and foreign banks. In other words, foreign banks in Sweden should be treated in the same way as we wish Swedish banks to be treated abroad.

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Articles in previous stability reports

2006:2

Can Swedish authorities handle distressed institutions?
Swedish authorities do not have sufficient possibilities of handling distressed institutions. The complications connected with the credit institution Custodia were a clear reminder of this. The problems are by no means confined to the small savers whose assets were locked up for a remarkably long time. By far the most serious aspect is that the current rules and regulations hamper the handling of acute problems, such as a future bank crisis, that threaten the financial system. The Riksbank considers there is a great need of new legislation.

Trading activity in credit derivatives and implications for financial stability
The tremendous increase in credit derivatives trading in recent years has given rise to an intensive debate about possible risks for the financial system. The Riksbank considers that at present the combined risks in this trading are limited. There is, however, some cause for concern about the lack of transparency in the market and the possibility of risks being concentrated. The article presents reasons for the Riksbank's assessment.

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Using external information to measure credit risk
A model for measuring and assessing the banking system's resilience has been developed by the Riksbank, using a readily-available portfolio model and information from banks' annual reports. The article presents this model, which can be used for stress testing and analysis of various scenarios.

Hedge funds and the financial system
The rapid growth of hedge funds in recent years has led to an international debate on potential threats to the financial system and a possible need of regulation. The article describes the development of hedge funds, in Sweden as well as internationally, and their possible consequences for the financial system.