Sveriges Riksbank

Financial Stability Report May 2000

Contents

Foreword

One of the primary functions of the Riksbank is to promote a safe and efficient payment system. The purpose of the Financial Stability Report is to present the Riksbank's appraisal of developments in the financial system and their implications for stability. The report is also intended to stimulate a discussion of matters that concern the stability of the payment system.

The report begins with a summary and the Riksbank's conclusions on the stability of the payment system. The analysis on which the conclusions are based is then presented. Trends in the banking sector are discussed in Chapter 1 of the report. The banks' credit risk in relation to macroeconomic developments is described in Chapter 2. As before, it should be noted that these accounts do not contain any monetary policy signals. Chapter 3 contains a discussion of counterparty and settlement risks. These sections focus on describing the risk situation for the banking sector and presenting the Riksbank's assessment of this situation. A fourth chapter discusses possible measures that are available to the Riksbank and other government agencies if signs are noted of a development which may lead to an excess build-up of risk in the banking sector.

The Financial Stability Report presents the essential subject matter of the reports and discussions on payment system stability that took place in the Executive Board on 5 April and 27 April 2000.

Stockholm, May 2000

Urban Bäckström
Governor of Sveriges Riksbank

Summary and conclusions

The positive earnings trend for 1999 has meant that the banks appear well prepared for a possible downturn in the economy or some other unfavourable development. Planned reductions in capital adequacy may, however, weaken the buffer that should be accumulated in times of prosperity in order to handle losses during periods of rising loan losses. Today, some build-up of risk is taking place in household lending. Although this build-up of risk could lead to losses for the banks if the economy turns downward, it has not advanced so far as to constitute a problem for the stability of the system.

Trends in the banking sector

For several consecutive years, the earnings trend for banks has been weak. The main causes of this are tightening competition, as manifested in diminishing market shares and falling margins in traditional activities such as deposits and lending, and increasing costs particularly for IT investments. In 1999, this trend was broken, primarily as a result of rising commission income and diminishing loan losses. The increase in commission income is largely due to the very positive developments on the stock market, which above all has led to rising earnings from mutual fund management. Should the stock values plummet, this earnings item would obviously deteriorate. However, the aggregate effect of a possible fall in share prices on the banks' earnings is not estimated to be too considerable. In a scenario based on relatively strong negative assumptions, the Riksbank has estimated the decline in earnings to be approximately 5 per cent of total earnings.

It is positive that the trend towards higher costs in the banks appears to have levelled out. For the first time since 1993, the banks now report an improved C/I ratio. There are indications that the investments that banks have made in Internet services over the past few years have begun to have effects on the level of costs. It is all the more remarkable that the banks, despite the marked rise in volumes for lending and deposits, have not managed to improve the net interest income, thereby demonstrating that there is tough competition within these areas of activity, and that profitability remains strained.

Overall, however, the earnings potential of Swedish banks appears to be positive over the next few years. There is potential both for an increase in earnings and a cost reduction. The stock market valuation of the banks reflects confidence in the banks' future earnings potential. It is unlikely that the banks' earnings will deteriorate as long as the general economic development remains as favourable as it is at present. However, earnings will probably deteriorate when the economy turns downward, mainly as a result of increasing loan losses.

The banks' level of capital adequacy is currently satisfactory, but the banking sector's plans to reduce equity are unfavourable from a stability perspective.

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equity are unfavourable from a stability perspective. Since earnings for banks is influenced to a fairly large extent by the development of economic activity, the banks ought to build up their equity during periods of economic upswing so that they can handle loan losses and other negative changes in their earnings during periods of economic decline. Against this background, it is less satisfactory from the perspective of risks, that the banks are reducing their equity at present. However, the reduction of equity is to a great extent due to mergers. On the condition that the economy does not deteriorate within the immediate future, there will also be time for the banks to build up their equity again, owing to good results. It is important, nevertheless, that this development actually does take place. Otherwise the banks could face a possible future economic decline with low capitalisation.

Macroeconomic developments and credit risks at the banks

In today's favourable economic situation, the risk of extensive loan losses for banks is slight. However, there is a danger of a build-up of credit risk in the banks' portfolios, which could result in loan losses when the economy eventually slows down. There is particular cause to assess whether risks are being built up in the banks' credit portfolios when the most important economic indicators point unequivocally towards a positive development. Not only GDP, but also household consumption and employment, have risen sharply over the past year and are expected to continue to rise for some time.

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The household sector is showing some signs of risk build-up, mainly in the form of a sharp rise in lending, amounting to 8.9 per cent on a yearly basis in March 2000. Household lending is largely driven by rising house prices, but loans for other purposes also appear to have increased. The household sector's ability to pay is primarily dependent on its disposable income. This has improved considerably over the past few years, but the sharp rise in household lending has entailed that indebtedness as a proportion of disposable income has also increased. At present, the ratio is over 100 per cent, which, however, is considerably lower than the levels at the end of the 1980s, when the corresponding ratio was 135 per cent. This, together with the fact that households' interest cost as a proportion of disposable income is lower than ever in spite of high real interest costs, means that the risk build-up nevertheless appears to be moderate.

A particular risk that pertains to the positive development of the stock market is that households are choosing to increase their share and mutual fund holdings, while opting to amortise less or borrow more when purchasing houses and capital goods. This generates an indirectly leveraged portfolio, and housing loans could be driven up to higher levels than would otherwise be the case. As long as the banks and other lenders' credit assessments are based on real incomes from employment and not on capital income from shareholdings or wealth values, the banks should not be running too high risks on account of this behaviour. Direct lending with shares as security is also comparatively low. Nor are there any indications from the fall in share prices in April that the household sector has been affected by problems of a more serious nature.

For lending to households to constitute any major risk for banks, several of the following macroeconomic changes would probably have to occur simultaneously:

- Reduced employment levels and reduced household incomes
- Falling house prices
- Falling share prices
- Rising interest rates

The extent of loan losses for banks in the event of a downturn in the economy will most likely depend

on how seriously households are affected by these factors. Bearing in mind the depth of the recession in the early 1990s, and the fact that loan losses in the household sector nevertheless were limited, it is reasonable to assume that the banks will be able to handle the current levels of risk build-up. Rising interest rates ought not to coincide with a downturn in the economy, in contrast to the situation during the previous crisis, when the defence of the fixed exchange rate produced a rise in interest rates. At the same time, the low interest rate levels mean that an increase even by a few percentage points would lead to a sharp increase in interest costs for borrowers. In summary, the development in the household sector appears to constitute more of a risk that individual households, especially in metropolitan areas, will not be able to handle their indebtedness if income levels and asset prices decline, rather than any serious risk that could affect the banks on a wide front.

In view of the positive economic situation, the development in the corporate sector appears comparatively restrained. Lending from all credit institutions has grown by 4 per cent over the past year and has constituted a diminishing proportion of GDP. Behind this low total increase, however, is hidden the fact that lending is diminishing in mortgage institutions, while it is growing in banks, indicating that other sectors could grow even though financing of property is falling. The Riksbank's indicators suggest that there is a low risk involved in lending to the corporate sector. Macroeconomic tendencies indicate fewer bankruptcies in the future, corporate interest coverage ratios and debt/equity ratios are developing positively, and the stock market valuation points to an increasingly lower credit risk in the corporate sector.

Prices for commercial properties continued to rise sharply during the second half of 1999, and the rate of increase for the calendar year 1999 was 11 per cent. The price increase is fuelled mainly by the favourable development of rents, which have risen even more than price levels. This has meant that direct return on commercial properties has also increased, and is favourable compared with the return on risk-free assets. There do not appear to be any expectations of significant price increases in the future.

The market for residential properties in metropolitan areas is currently very much characterised by the conversion of rental property into tenant-owned apartments, driven by the fact that residential property in an attractive location is worth considerably more to a tenant-owners' association than to a landlord. The sharp rise in prices for tenant-owned apartments in recent years has enhanced this difference in value. The conversion process means that many property owners can realise good profits by selling to tenant-owners' associations. For the banks, this means that individual borrowers in the form of landlords are replaced by tenant-owners' associations and a collective of tenant owners, which should involve a reduced lending risk. The risk that above all is inherent in this development is that property value is pushed up and that the mortgage level is high in properties that have not yet been sold to tenant owners, and particularly if the sale for any reason at a later stage is not forthcoming. However, it is difficult to see that this would take place to such a considerable extent that would seriously affect the banks.

In provincial towns and small towns, prices of both commercial properties and apartment buildings appear to be developing fairly cautiously, and are not being swept along by the growth taking place in the metropolitan areas.

In the current economic situation, there is a risk that demand for both housing and commercial premises will be pushed up at a rate that is not matched by supply. Such a course of events would not be unnatural, in view of the inertia that usually characterises the supply side of the property market in the form of long lead times for production of new buildings. If demand is too high, the result could be a sharp increase in rents and prices for commercial properties, followed by a decline, or that the number of vacancies could start to rise as the supply side catches up. If, moreover, the inertias mean that a large number of construction projects are initiated with high expectations on income from rents in the

future, and these buildings are completed just as the economy starts to turn downwards and demand slackens, there is a risk that borrowers' solvency will be negatively affected. Even though production of new buildings is increasing at present, such a course of events seems improbable. However, it is not unreasonable to expect that a slight downward adjustment of prices will occur on the property market once the gap between supply and demand begins to close, but it does not seem likely that it will be of such a magnitude that the banks would be seriously affected.

Counterparty and settlement risks in the banking sector

The millennium transition entailed that the banks reduced their exposure to counterparty and settlement risks considerably. Inspite of this the largest individual exposure for the four major banks was on average as high as 38 per cent of tier 1 capital according to the Riksbank's survey at the year-end.

Exposure to settlement risks in foreign exchange trade can to some extent be limited by improving settlement procedures, especially for trade in the currency pair SEK/EUR, where there are no time differences and where Swedish banks have access to real-time settlement systems for both currencies through the Riksbank's system. Measurements of how the largest exposures are distributed over different currency pairs, however, show that SEK/USD and USD/EUR are the predominant pairs, accounting for a total of 58 per cent of total exposure. The dominance of the dollar makes it relatively difficult to reduce the settlement risk by means of improved administrative procedures.

Via CLS Bank, a new settlement procedure according to the PvP principle, i.e. eliminating the credit risk by simultaneously settling payments, is being made available for foreign exchange trade. This new clearing activity will make it possible to perform payment netting in the foreign exchange market, which will be effective in reducing exposure to settlement risk in trade with the included currencies. This activity is scheduled to be launched during the second half of 2001. As the Swedish krona will not be included from the start, Swedish banks will still have considerable exposures to settlement risks in foreign exchange trade, and there is reason to continue to working on reducing these.

The Riksbank considers that the rules regarding large credit exposures have some shortcomings in their treatment of counterparty and settlement risks. As it is, settlement exposure is not included at all, and the credit exposures that a bank is subject to in relation to other financial institutions can, to a large extent, be excepted. The Riksbank regards it as a particularly serious problem that exposures between financial institutions are not sufficiently limited, since this leads to increased systemic risk, i.e. the risk of financial problems within one institution spreading to other areas of the financial system.

The Riksbank considers that the rules relating to large exposures should be tightened so that exposures between financial institutions are also considered more carefully.

The Riksbank therefore considers that the rules relating to large exposures should be tightened so that these exposures are considered more carefully. The regulatory framework for the financial sector is primarily prepared internationally by the Basle Committee and the EU. This means that Swedish rules cannot be formulated in a way that differs too dramatically from the international rules, if this would involve any serious impairment of the competitive strength of Swedish financial companies. With regard to foreign exchange trading, the Riksbank is apprehensive that a total inclusion of settlement exposure would have far too negative consequences in this respect. Therefore, the Riksbank's opinion is that a revision of the rules should be postponed, and that Sweden should instead work internationally for settlement exposure to be regarded as a credit risk, both with regard to the rules for large exposures and the rules relating to capital adequacy.

With regard to other exposures between finan-

cial institutions, however, the Riksbank considers it possible to tighten the rules without impairing the competitive strength of Swedish companies too severely. The Riksbank judges that it should be possible to fully include exposures between financial institutions in the rules on large exposures, and intends to discuss the possibility of such a change in the rules with Finansinspektionen, the Swedish financial supervisory authority and the Ministry of Finance.

Which measures can be taken in the event of a significant build-up of risk in the banks?

The analysis undertaken by the Riksbank in the Financial Stability Report largely focuses on assessing whether there is build-up of risk in the banking sector, which may lead to a financial crisis when the economic situation worsens. If the Riksbank or the other authorities responsible for financial stability were to assess that the level of risk build-up was too excessive, it has not been made clear which instruments could be used to counteract this development and how efficient these instruments would be. First and foremost, the Riksbank attempts by means of its Financial Stability Report, and in other ways, to contribute to an open discussion with the banks on the tendencies towards a build-up of risk—i.e. moral suasion.

If this does not prove to be sufficient, a number of other possible measures can be discussed:

- Changes in structural regulations
- Raised capital adequacy requirements
- Other quantitative regulations
- Repo rate increase

The problem with most of these measures is that they involve some form of cost to society. The authorities will only consider it to be worth implementing any of the above measures and thus bearing the associated cost, if they judge the risk of a future crisis to be evident. At present, the tendencies towards a build-up of risk in the banking system are not large enough to constitute grounds for intervention.

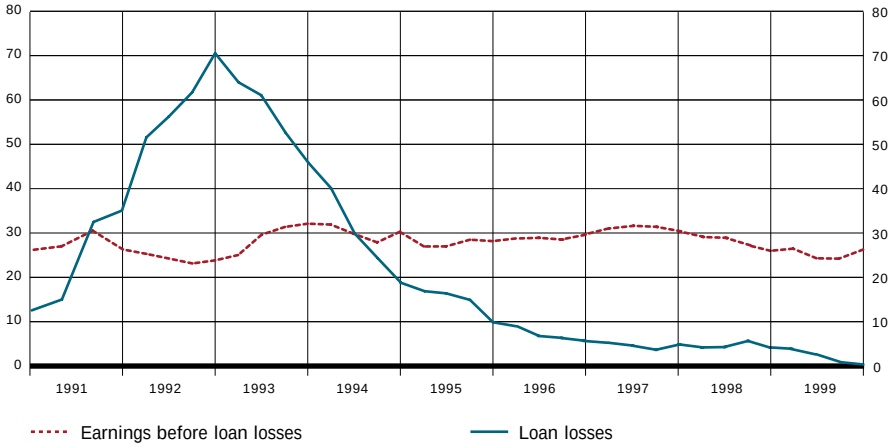
CHAPTER I

Trends in the banking sector

The underlying earning capacity of the banking sector developed favourably during the latter part of 1999, thereby contributing to improved profitability. Profitability has been favourably influenced by a rise in share prices, low loan losses and a relatively restrained cost level. The pressure on the banking industry to change remains strong, and is associated with strategic risks for the banks. It would be reasonable to watch out for a possible weakening of the banks' financial strength during 2000 as a result of buy-back of shares and company acquisitions. Reduced capital reserves during times of prosperity could cause problems in handling increased loan losses when the economy experiences a downturn.

One of the essential tasks of the Riksbank is to monitor developments in the banking sector as a whole, and to take particular note of circumstances that can have repercussions on the stability of the financial system. In previous reports, the Riksbank has discussed a number of factors that have led to structural pressure to change and increased competition from new players within the banking sector. These factors include rapid technological developments, changes in household savings behaviour, improved access to market financing for companies, increased internationalisation and deregulation. The choices

Figure 1:1.
The major bank groups' earnings before loan losses and loan losses, moving four-quarter average.
SEK billion, 1991 prices



Note. Adjusted for extra ordinary items from 1997 and onwards. Merita Bank is included from the first quarter of 1997 and onwards.
Sources: Quarterly and annual reports and the Riksbank.

made by banks to meet this increased pressure to change are associated with strategic risks. The Riksbank has, among other things, indicated how changed conditions for the banking industry can lead to decreasing profitability, which in certain circumstances can act as an incentive to greater risk-taking. Falling profitability can also impair the banking sector's ability to generate the capital required to absorb losses, which in turn can have repercussions on the stability of the financial system. Against this background, this chapter reports on the financial development in the banking sector since the publication of the previous Financial Stability Report.

The banks' financial development

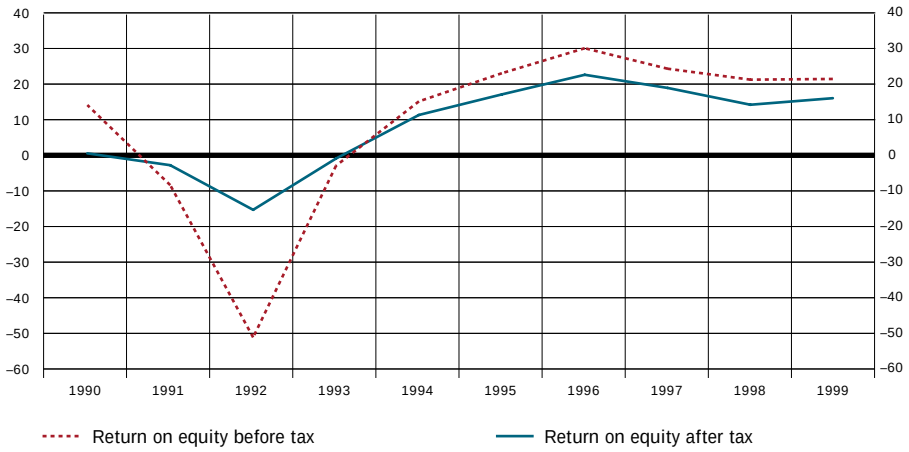
For some time, the banking industry has been characterised by stiffening competition within several important areas. For the major Swedish banks, this has manifested itself partly in falling market shares and margins within important areas such as deposits and loans (see Figure 1 in the Appendix). Several factors have contributed to this stiffening of competition. For instance, technological developments, partially changed customer behaviour, the introduction of the euro, deregulation, and a general globalisation of the financial markets, have entailed a lowering of the entrance barriers on those markets that were traditionally served by the banks.[1]

One common strategy for meeting the increased competition has been to grow by means of acquisitions of, and mergers with, both domestic and foreign competitors. The motive has been to improve the ability to utilise possible economies of scale, and to strengthen one's position on different sub-markets. In some instances these mergers have also been a way of broadening one's own product range to encompass products such as insurance products. Investment in new technology has also been a means of both improving cost efficiency and the opportunities to expand into new markets. Swedish banks have been particularly active in terms of investing in Internet-based activities (see the fact box on page 14).

Stiffening competition, in combination with high costs, has for some years had repercussions on the earnings trend for banks. The aggregate earning capacity for the four major bank groups has remained more or less the same in absolute figures throughout the 1990s, even though new companies have been added through acquisitions and mergers (see Figure 1:1).[2]

During the latter part of 1999, however, the

Figure 1:2.
The major bank groups' weighted average return on equity before and after tax. Per cent



Note. Adjusted for extra ordinary items from 1997 and onwards.
Sources: Quarterly and annual reports and the Riksbank.

banks' earning capacity improved. This is largely due to the strong development of the stock market during the final quarter of 1999. The development of share prices meant higher income from brokerage activities, fund management and corporate finance services, thereby leading to a strong increase in banks' net commission income over the year (see Figure 3 in the Appendix). The losses from trade with interest-related instruments which were charged to the net earnings from financial transactions mainly in the second and third quarter, were thereby also partially compensated by profits from share trading during the last quarter. Loan losses have continued to develop favourably, and declined by as much as SEK 5.4 billion in 1999.[3]

The average return on equity also improved and amounted to over 16 per cent for the year, corresponding to an improvement by nearly 2 percentage points on 1998 (see Figure 1:2).[4] In view of the current levels of inflation and interest rates, the banks' return on equity is good. The strong profitability is partially attributable to exceptionally low loan losses.

The banks' income is becoming increasingly dependent on the development of the Swedish and international stock markets.

The banks' income is becoming increasingly dependent on the development of the Swedish and international stock markets. A significant fall in share prices could therefore rapidly reverse the positive earnings trend for banks (see fact box). One contributing cause of this increasing dependence is that savings are gradually being channelled from bank deposits to other, off-balance sheet types of saving (see Figure 2 in the Appendix). This change in saving patterns contributes to a reduction in the interest income of banks in relation to their commission income (see Figure 3 in the Appendix). The importance of the net interest income is also reduced by the fact that large enterprises are increasingly borrowing directly from the capital markets. One of the reasons for this is that the introduction of the euro has contributed towards a more liquid market for corporate bonds.[5]

1 See also Financial Stability Report 1999:1 and 1999:2.

2 Among others, Stadshypotek and Merita Bank were added in 1996 and 1997, respectively.

3 It should be noted, however, that comparisons with 1998 are influenced by the reserves for Russian loan losses that reduced the results for that year.

4 Adjusted for extraordinary items.

5 See Financial Stability Report 1999:2.

HOW WOULD THE BANKS BE AFFECTED BY A STOCK MARKET CRASH?

In an earlier report (FS 1999:1), the Riksbank described the effects of a major fall in share prices on the banks' credit risks. The conclusion that was drawn at the time was that the effects of a stock market crash would be very small, mainly since shares are used as collateral for only a relatively insignificant portion of banks' lending (see Figure 15 in the Appendix). This appraisal still applies.

However, it can also be seen that a growing portion of the banks' income and profits is related to asset management, corporate finance services and brokerage of shares. Thereby, the banks' earnings are becoming more strongly linked to the general development of the stock market. In this report, the Riksbank will endeavour to illustrate the effects of a substantial fall in share prices on the banks' income.

It should be pointed out that income is mainly affected only if the weak development is *lasting*. In this perspective, the fall in share prices in April will only have effects if it proves to be lasting. Let us therefore assume that the stock exchange initially falls sharply and then develops slowly over an extended period. A long term drop in share values could have a negative effect on the banks, both directly and indirectly, in several ways.

Directly:

- through reduced income from asset management, since the *value* of the assets will decline

Indirectly:

- through reduced commission income, since the *number of transactions* can be expected to fall during a longer stock market decline
- through reduced net inflow to the securities market as investors' expectations become increasingly negative
- through reduced income from asset management since the low returns are likely to produce greater pressure on management fees.

Some of the effects can be illustrated by using a simple mathematical example. Let us assume that the stock market falls extremely sharply this year. Let us say that the value of shares falls by 50 per cent in May, and that the market remains stable during the following twelve months. This would mean that the *average* value of shares on the stock exchange would be 30 per cent lower during this period than it was last year. Add to this the assumption that the number of transactions is 30 per cent lower during this twelve-month period than in 1999, as a result of the weak development on the stock market. Finally, we will assume that the falling share prices reduce the average value of equity funds and hybrid funds by 30 and 15 per cent respectively for the period compared to 1999. Bond/money market funds are assumed to remain unchanged by events.

The scenario outlined above would, according to the Riksbank's calculations, give rise to a loss of income of approximately SEK 4 billion for the four major bank groups. In 1999, total income for the four major bank groups amounted to just over SEK 80 billion, of which less than SEK 15 billion was attributable to commission on securities. Consequently, slightly more than one fourth of commission income, but only 5 per cent of total income, would disappear. The relative reduction in income from securities is approximately the same for all four major bank groups. In relation to total income, however, the effect differs considerably between the banks.

It is hardly surprising that the banks that rely most heavily on securities-related income are also the ones that are the most vulnerable to the effects of a decline in the stock market. In absolute figures, each bank would lose income in the interval of SEK 0.6-1.5 billion, depending on the degree to which activities are focused on the securities market.

The extent of the total effect on income depends *partly* on the banks' ability to cut down costs for asset management, and *partly* on the scope of the indirect effects.

A lower managed volume does not necessarily make it possible to cut down on personnel. On the contrary, there are important economies of scale in this kind of business. On the other hand, lower staff bonuses are to be expected.

It is, of course, difficult to attempt to estimate the indirect effects of a long-term decline in the stock exchange on saving in mutual funds and share trading. It is reasonable to assume, however, that trading would be less intensive. Moreover, activities within, for instance, corporate finance services (which is a very profitable activity for some of the major bank groups) would probably be reduced. Previous experience also indicates that household saving in mutual funds declines in times of negative share price development. However, such a net outflow need not be all that dramatic, and the banks would be partially compensated by the fact that a considerable share of any net outflow from mutual funds would be transferred to safer forms of saving, such as interest funds and deposits in bank accounts.

Overall, we can expect that a substantial fall in share prices would lead to some fall in income. However, it can be stated that a decline in the stock market according to the above-described scenario would not entail any serious threat to the earning capacity of the major banks. If a crash were to entail long-term consequences for the real economy, however, in the form of an increased number of bankruptcies and bad debts, this could generate serious problems.

The net interest income for the major Swedish bank groups has been under pressure for some time. However, some degree of recovery took place in the latter part of 1999. One direct cause of the declining trend in net interest income is to be found in the low interest rate levels that have prevailed for some time now. Low short-term interest rates affect net interest income mainly in two ways: *partly* by reducing earnings on the banks' surplus liquidity (which is usually invested in short-term lending, for example on the

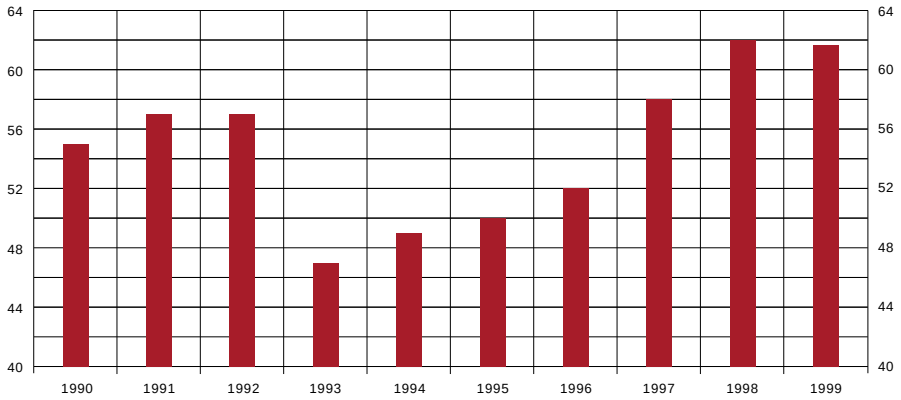
deposit market), and *partly* by putting pressure on the banks' deposit margins (i.e. the difference between the banks' interest on deposits and the short-term market interest rate). At a certain short-term interest rate level, every further lowering contributes to reduced margins on deposits, since there is a limit to how far the interest rate on deposits can be lowered (the banks can not really lower interest rates on deposits to a level under zero per cent). The recent rising short-term interest rates could, according to the same reasoning, contribute towards improving both the earnings on surplus liquidity and deposit margins in the future. Improved deposit margins, in combination with rising lending volumes, could generate a more favourable development of the banks' net interest income over the coming year. The fact that net interest income has stagnated is surprising in view of the strong growth in lending (see also Chapter 2) and the stable level of deposits. This indicates that competition is tough on these markets. The four major banks have also lost market shares for both lending and deposits (see Figures 4 and 5 in the Appendix).

Pressure on net interest income also comes from more indirect factors, such as a change in saving patterns and increased competition. Saving increasingly takes place in forms that are not included in the banks' balance sheets, such as mutual funds and insurance. Since 1993, deposits have decreased as a proportion of the banks' liabilities by more than 15 per cent. This decline has forced the banks to compensate by turning to other forms of financing, for instance, by issuing bonds. Since deposits constitute a very inexpensive source of financing, the banks' financing costs have risen. Moreover, increased competition has squeezed the banks' margins on deposits and lending. At present, the pressure on margins is most noticeable in lending in the corporate and household markets.

The reduced margins mean that the banks are forced to be more cost-efficient in order to withstand competition. During 1999, total costs for banks have declined, thereby turning the trend of rising costs per income unit (C/I ratio) that has been observed since 1994 (see Figure 1:3).[6] This development is explained *partly* by the favourable development of income, and *partly* by the fact that the banks' IT costs appear to have levelled out. For the first time since 1996, IT costs as a proportion of the banks total costs have declined (see Figure 6 in the Appendix).

6 C/I ratio: Costs, excluding loan losses, as a proportion of income.

Figure 1:3.
Costs before loan losses as a proportion of income (C/I ratio) for the major bank groups.
Per cent



Sources: Quarterly and annual reports and the Riksbank.

The banks' IT investments will only lead to cost reductions if the banks succeed in reducing costs within their traditional activities.

In this context, it is worth pointing out that the banks' IT investments will only lead to cost reductions if the banks succeed in implementing cost reductions within their traditional activities.[7] In the banks' annual reports for 1999, some positive signs are discernible with regard to the banks' Internet investments. Several banks have shown concrete opportunities to cut costs as an increasing proportion of customers are performing their bank transactions via the Internet. There are also signs that Internet customers on average generate more income than traditional bank customers (see fact box below).

7 See Financial Stability Report 1999:2.

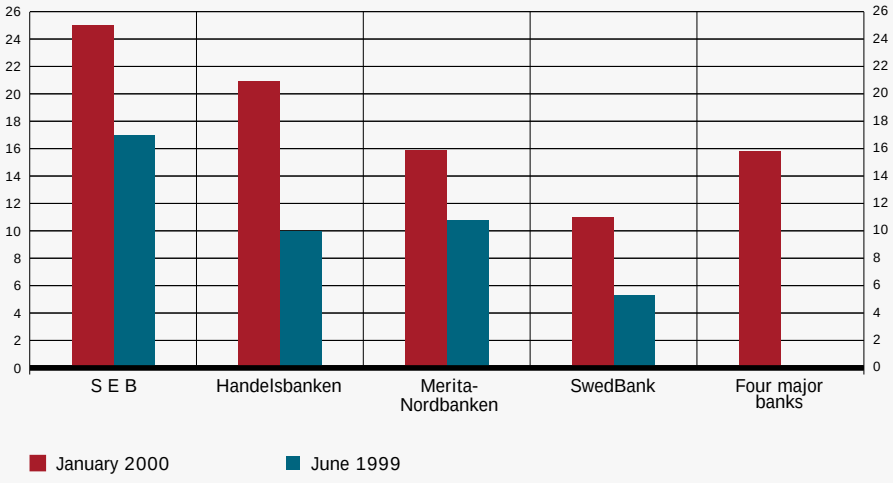
THE BANKS AND THE INTERNET

In previous stability reports, the Riksbank has discussed the growing importance of IT for banking activities.[8] One noteworthy development is the emergence of primarily Internet-based services. In early 2000, an average of nearly 16 per cent of customers of the major Swedish banks used the Internet for contacts with their bank (see Figure R:1). This proportion is very high in an international comparison.

For the banking sector, the Internet has been emphasised as a means of making the distribution and production of bank services more efficient. For a long time however, the banks have found it difficult to demonstrate any concrete savings as a result of the Internet. Instead, the Internet has primarily been associated with higher costs stemming from IT investments. In the banks' annual accounts for 1999, however, there are signs that the investments are starting to show results. Several of the banks maintain that the Internet has enabled them to cut back on personnel and close down branch offices. SEB, for instance, justifies its planned closure of 20 per cent of its branch offices with the fact that a greater proportion of transactions is being undertaken via the Internet. Moreover, Merita-Nordbanken has stated that the bank's investment in the Internet, over a three-year perspective, could have positive effects on costs and income amounting to between SEK 2.2 and 2.6 billion per year.

While the Internet generates potential cost-savings, it also constitutes a threat to the dominant position of the traditional banks on the financial market. Several

Figure R:1.
Proportion of Internet customers.
Per cent



Sources: January 2000: The banks' annual reports and web sites and the Riksbank.
June 1999: Lafferty Business Research and Banker.

Figure R:2.
Proportion of Internet transactions, 1999.
Per cent

Source: The Riksbank.

factors indicate that the Internet will lead to increased competition in the banking sector. One important factor is that the Internet enables instant price comparisons that could squeeze the banks' margins. One example of this development is the independent players who have established "marketplaces" for mutual funds on the Internet. In these marketplaces, customers can compare and choose between a very large number of mutual funds both from Swedish and foreign fund managers. These services are free of charge to the customer, but the distributor charges fund managers a certain agency commission. On the one hand, these players pose a double threat to the banks—they increase competition by making the markets more transparent, and also claim part of the banks' commission income. On the other hand, these players provide yet another distribution channel for the banks' products.

Moreover, the Internet makes it easier for potential challengers to break into various product-specific and geographical market segments, and to take customers from the traditional banks. By utilising the Internet as a distribution channel, geographical expansion no longer entails expensive investments in local office networks. However, it should be regarded as uncertain whether a sufficient number of customers are satisfied with having only an Internet bank without the option of direct contact with a branch office. If this is not the case, then the exclusively Internet-based banks could never become more than marginal players. However, even small low-price competitors would put pressure on the banks' margins.

It is probably the case that certain bank products are more suitable than others for the Internet. It is reasonable to assume that the more standardised a product is, the more suitable it is for distribution via the Internet. Therefore, it is interesting that share trading was the area that showed the highest proportion of transactions via the Internet in 1999 (see Figure R:2).[9] As opposed to payment services, stockbroking is regarded to be an area where customer contact and advice are important. This may, to some extent, be explained by the fact that stockbroking is the area in which the banks are exposed to the toughest competition, with many new Internet stockbrokers who are pushing down commission and deposit fees. In addition, trading in shares is often largely undertaken by customers who are active and up-to-date with new technology and who are therefore possibly more open to change and aware of costs than customers who only utilise the more standard services. Furthermore, it is emerging that more customer-specific products are also highly suitable for the Internet, on the condition that the adherent advisory services can be adapted to the new format. Nearly all Internet brokers offer comparatively well-developed analytical instruments, such as share analyses, portfolio management and share price information. The phenomenon of banks providing the instruments but preferring to leave the actual analysis to the customer also reflects the fact that bank customers have become increasingly sophisticated.

8 Financial Stability Reports 1999:1 and 1999:2.

9 It should be pointed out, however, that the total number of transactions is considerably larger for payments and mutual funds than for shares.

The banks' costs during 1999 were increased by mergers, international ventures and bonus-related wage costs within corporate finance services and stockbroking. In the course of 2000, some synergy effects from the mergers should materialise, thus contributing towards a more favourable development of costs. Several banks were able to gain substantially from the surplus value of pension funds in 1999. In practice, this has meant that these banks have not had any costs for pensions, which has influenced total personnel costs favourably. Several of the banks will probably continue to benefit from this cost advantage.

Overall, profitability in the banking sector was favourable in 1999, with underlying return on equity amounting to over 16 per cent. It should be remembered that loan losses are at a historically low level and that a significant positive contribution to income came from the exceptional rise in the stock market during the final quarter of 1999. The interim reports for the first quarter of 2000 show that these factors have entailed a continued favourable earnings trend. There are strong indications that loan losses will remain at low levels for another year or so (see Chapter 2). This, in combination with the favourable development of the income and cost side, means that the forecast for the next few years is relatively positive.

THE STOCK MARKET'S VALUATION OF THE BANKS—WHAT IS THE STOCK MARKET'S ASSESSMENT OF FUTURE PROFIT POTENTIAL?

Despite the favourable earnings trend in the banking sector, bank shares have underperformed the Stockholm stock exchange index during a relatively long period (see Figure 7 in the Appendix). This could, to some extent, be attributable to the expectations of increased interest rates, and also to the market's relatively weak interest in investing in traditional sectors. Another explanation may be that the market, due to the rapid changes occuring in the banking sector, does not assess that it demonstrates particularly high potential to generate growth.

The stock market's valuation of bank shares includes information about the expectations for future earning trends. In order to obtain a picture of these expectations, the market's valuation of shares can be compared to what would be a theoretically motivated share value—an attempt to assess the company's "fundamental value". One method is to see if the company's value is justified in terms of what is implied by reasonable assumptions about profit growth and the market's required return, according to a simple valuation model. The model is described by the following formula.

$$\frac{P}{NAV} = \frac{ROE - g}{r - g}$$

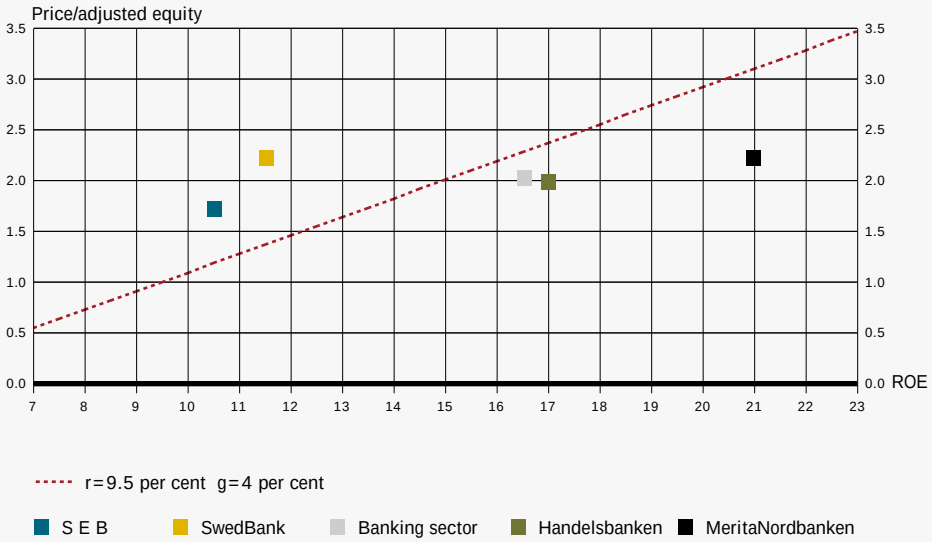
P = share price
NAV = net asset value
ROE = return on equity
r = the market's required return
g = sustainable profit growth

Given that we have an estimation of the company's long-term profit trend and the market's required return on the investment, the company's "theoretical value" can be expressed as a linear function of return on equity. A particular level for the return on equity would thus lead to a certain share price. In order to perform this calculation, certain assumptions need to be made about the market's required return and the long-term profit trend.

In this example, it is assumed that the nominal sustainable profit growth in the banking sector is always 4 per cent per year, which corresponds to a real GDP growth of 2 per cent plus an annual inflation rate of 2 per cent.

The market's risk premium is the expected extra return, in addition to the return on a risk-free investment (for instance, in government bonds), that the market requires before investing in a particular share. At present, the market's average risk premium for shares is 3.5-4 per cent. The long-term interest rate on govern-

Figure R:3.
The ratio of market price to adjusted equity related to normalised return on equity as of 31 December 1999.
Per cent



Source: The Riksbank.

ment bonds is around 5-6 per cent. The market's required return on shares should consequently be just under 10 per cent. Let us, for the sake of simplicity, assume that the required return on bank shares is around 9.5 per cent.[10]

Based on these fairly rough assumptions, we can calculate the banks' "theoretical value" (normalised with adjusted equity) as a function of return on equity. The line in Figure R:3 above describes this relationship for the entire banking sector. The higher the return on equity, the higher the value. A lower required return and higher profit growth would motivate a higher valuation for each given level of return on equity.

In the model, return on equity (ROE), is a long-term sustainable return over time. If the valuation differs from the expected value according to the function, this could be interpreted as a sign that the market is expecting a future change in the profit trend, i.e. that the profit level will approach the profit level that the theoretical model implies (see Figure R:3). For the banks that are positioned above the line, profits are expected to rise to the return levels that are given on the line, while for those under the line, a corresponding reduction is expected.

The market's actual valuation of the banking sector corresponds with a theoretical return on equity of 15.5 per cent, which appears to be fairly well on a par with the valuation shown in the model.[11] This indicates that the market's aggregate valuation of the banking sector is reasonably sustainable over time, and that the market does not expect any dramatic changes with regard to profit trends. It should be emphasised, however, that this is a simplified model, and that changes in the assumptions could entail considerable changes in the result.

10 The assumed yield requirement is the sum of the 10-year government bond rate as of 30 December 1999, and the market's forecast long-term risk premium as of autumn 1999, according to a survey performed by Price Waterhouse. In principle, it is possible to adjust the risk premium by using a beta value in accordance with the CAPM model, but since the beta values for the banks differ considerably, no such adjustment has been made.

11 Equity has been adjusted for goodwill, and costs for amortisation of goodwill have been re-entered in the profit. Furthermore, the share value has been adjusted (reduced) for surplus value in pension funds, while the income has been adjusted for the compensation for pensions that the banks received during 1999.

The banks' capital adequacy situation

At year-end 1999, the banks' capital adequacy appeared to be satisfactory (see Table 1:1). During 2000, however, the situation could change. This is partly because several banks intentionally built up a capital adequacy ratio during 1999 that exceeds their respective long-term target. This considerable capital buffer was motivated by plans to acquire other banks. All other factors being equal, the capital base is reduced in connection with acquisitions of other banks. In some cases, the capital level is also reduced consciously through repurchase of shares in one's own bank. This is motivated by the stock market's requirements for a higher yield, which can be achieved through greater indebtedness. The higher level of indebtedness increases the level of risk for the bank's lenders, including those who invest in those securities that are issued by the bank. The rating institutions often submit assessments of how the decline in equity will affect the bank's creditworthiness, thus creating a certain balance between the interests of the shareholders and those of the lenders. Repurchase of shares or acquisitions of other banks can in some cases lead to a reduction in the primary capital ratio to a level under 6.5 per cent. Under normal circumstances, this is not a problem, since the banks have a relatively good ability to generate new capital from earnings. If, however, the macroeconomic development should deteriorate dramatically compared to expectations, for instance, then this could lead to significant problems.

Historically, one of the most difficult aspects for banks has been to differentiate good borrowers from bad during periods of cyclical upturn when loan losses are low. It is therefore justified to question the measures used intentionally during economic booms which contribute to reducing the capital that would cover potential loan losses during a cyclical downturn. Such a development is questionable, especially in view of the sharp increase in indebtedness that we have noted in the household sector (see Chapter 2).

The likelihood that potential problems would affect the banking system asymmetrically is greater today than at the time of the most recent Swedish bank crisis.

During the bank crisis, it was possible for the banking sector to maintain very high margins as a means of repairing some of the damages caused by substantial loan losses. In the stiffening competition of today, it is not certain that this option will be open to banks in the event of rising losses, especially if problems affect the players asymmetrically.[12] The likelihood that potential problems would affect the banking system asymmetrically is greater today than at the time of the most recent Swedish bank crisis. The reason is that the players differ more from one another in their strategic focus and the composition of their assets today than in the early 1990s. Moreover, there is a greater number of niche players within different market segments and this number is increasing fast. Due to lower entry barriers, the Swedish market also has more international players who are not affected to the same extent by specifically Swedish economic problems.

In summary, the reduced capital adequacy of the banks is negative from a stability perspective. It may be necessary for the banks to increase their capital adequacy in order to be able to cope with a possible future recession. A possible positive earnings trend during the next few years can contribute to strengthening this development.

12 If problems affect the players to different degrees, they do not all have the same need to maintain high margins.

Table 1:1.
The banks' capital adequacy.
Per cent

	S E B		Handels-banken		Merita-Nordbanken		Swedbank		Total	
	1999	*1998*	*1999*	*1998*	*1999*	*1998*	*1999*	*1998*	*1999*	*1998*
Total capital ratio	14.6	10.9	9.4	9.8	12.0	9.9	10.4	11.6	11.4	9.3
Tier 1 capital ratio	10.8	8.1	6.5	6.3	8.3	7.4	6.0	6.1	7.7	6.2

Sources: Annual reports of the banks.

CHAPTER 2

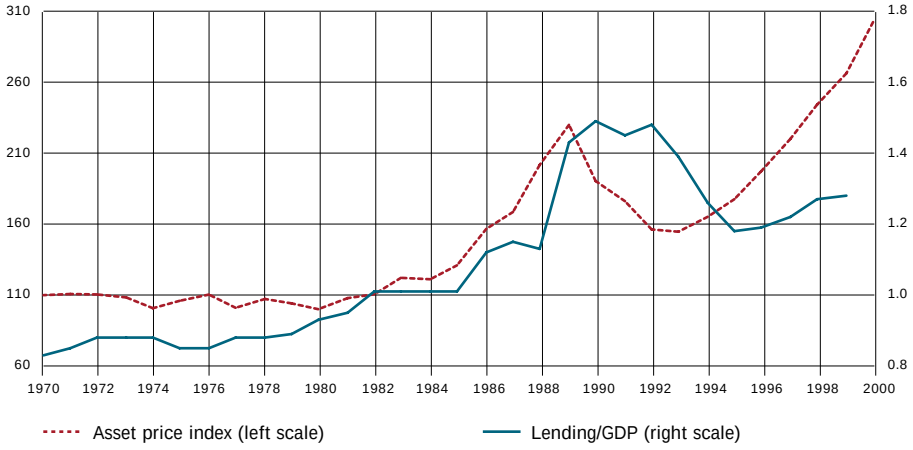
Macroeconomic developments and credit risks at the banks

The favourable economic situation Sweden is currently enjoying means that the risk of loan losses is low. The increase in indebtedness may cause problems for the household sector in the event that the high level of expectations about households' own financial progress are not fulfilled. In the corporate sector, the situation looks good at present. Companies are well equipped to cope with a potential cyclical downturn. Property prices continue to rise, especially for residential properties in the metropolitan areas, although prices appear to be driven by fundamental factors rather than by speculation.

The banks' loan losses are very much dependent on macroeconomic trends. In a downturn, companies find it difficult to sell their products and services, and this can lead to difficulties with payments and, eventually, to increased loan losses for the banks. Households are affected in so far as a downturn means higher unemployment and a decline in incomes, which can lead to difficulties in fulfilling payment commitments.

Currently the macroeconomic situation looks very favourable. During 1999, GDP grew by 3.8 per cent, unemployment fell, exports rose, investment growth

Figure 2:1.
Lending as a share of GDP and real assets prices.
Share of GDP and index: 1980=100



Note. Lending refers to lending to the Swedish general public (households, companies and local authorities) in relation to GDP. The asset price index is a weighted average of shares, prices of single family dwellings and prices of commercial property. Data until 31 December 1997 was produced by BIS. For 1998 and subsequent years, the data is based on Riksbank calculations.
Sources: BIS and the Riksbank.

was good, and public finances were strengthened. This positive trend is expected to continue, driven by increased private consumption, as well as an improved international economic situation. For companies, this means a better market for their products, both at home and abroad. Conditions look bright also for the household sector. The soun d economic situation means reduced unemployment and continuing strong growth in real wages. The relaxation of fiscal policy has further improved households' finances. The brightness of future prospects is reflected in the confidence indicators for both households and companies.[13] These indicators are currently at historically very high levels (see Figure 11 in the Appendix).

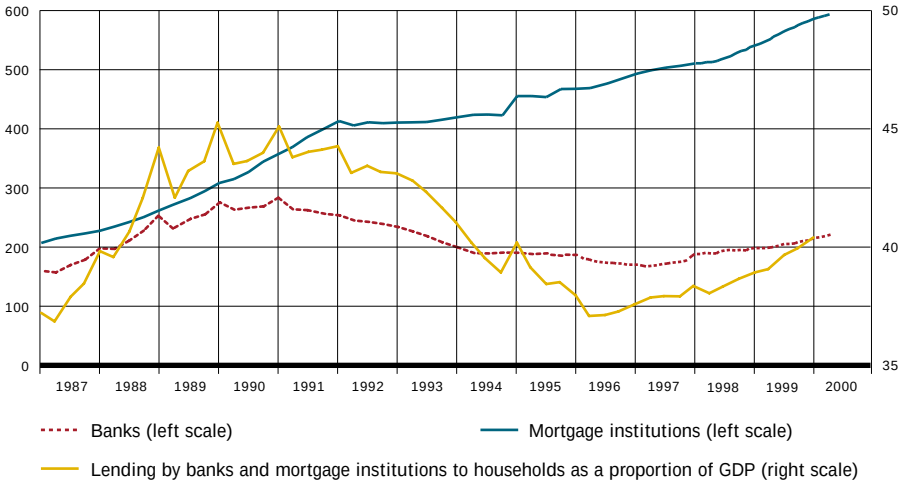
Currently the macroeconomic situation looks very favourable.

Overall, the favourable economic situation means that there is no immediate risk of substantial loan losses. For this reason, the Riksbank's analysis concentrates on investigating whether there is any build-up of risk which could cause problems when the economic situation deteriorates.

Such a build-up of risk could take place if the cyclical upswing were to generate an increase in credit growth. An increase in lending is, of course, a positive factor for growth, and is natural in a situation where companies invest to meet increased demand, and where households borrow to purchase capital goods and to meet rising house prices. The recent trend of increased lending in combination with rising asset prices is, however, reminiscent in some respects of the situation at the end of the 1980s. At that time, rising asset prices financed by a credit expansion led to serious problems when assets prices fell. At that time, the rise in asset prices was largely due to increasing property prices. In the present situation, it is primarily rising share prices which have driven up asset prices. These are not financed by loans to the same extent as were property prices at the end of the 1980s (see Figure 2:1).[14]

Almost 60 per cent of lending by banks and mortgage institutions goes to the corporate sector. The corporate sector is, however, usually responsible for a considerably greater proportion of loan losses. This is because households' debts are not wiped out in the same way as companys' debts in bankruptcy. Households are, therefore, less inclined to borrow to finance risky projects.[15] We will start by analysing the household sector, and then move on to the corporate sector. The property sector is analysed separately, since a substantial proportion of corporate lending relates to property financing.

Figure 2:2.
Lending by banks and mortgage institutions to households, and total lending as a proportion of GDP.
SEK billion and per cent



Note. Statistics Sweden changed the method of computation of GDP with effect from 1993.
The Riksbank has recalculated the series prior to 1993, using the new method of computation.
Sources: Statistics Sweden and the Riksbank.

The household sector

LENDING TO HOUSEHOLDS

The economic outlook for households is bright. In the past few years, real wages have increased, unemployment has fallen and housing prices have risen, and this favourable trend is expected to continue. Given this situation, it is hardly surprising that lending to households is continuing to rise relatively rapidly. Aggregate lending to households increased in March by 8.9 per cent on an annual basis, which is an increase of SEK 66 billion since March 1999. Lending by banks and mortgage institutions in relation to GDP has also increased, and in December 1999 amounted to 40.4 per cent of GDP (the corresponding figure in 1998 was 38.9 per cent). This means that lending to households is growing more rapidly than the economy as a whole. It should, however, be emphasised that lending has not reached the levels which prevailed at the end of the 1980s, when lending to households at its maximum represented 47 per cent of GDP (see Figure 2:2).

A breakdown of lending shows that lending by mortgage institutions increased by 7.7 per cent, by banks by 12.2 per cent and by finance companies by 10.0 per cent. The annual rate of increase in lending from finance companies slowed somewhat in March after having been around 45 per cent in recent months, and lending by financial companies is now at the same level as it was at the end of the 1980s. The increase in lending by mortgage institutions is due, above all, to households borrowing to meet rising property prices. Rising house prices have also led to an increase in bank lending, since banks and not mortgage institutions provide the loans for the portion of the property's value which is over the loan to value ratios set by the mortgage institutions.

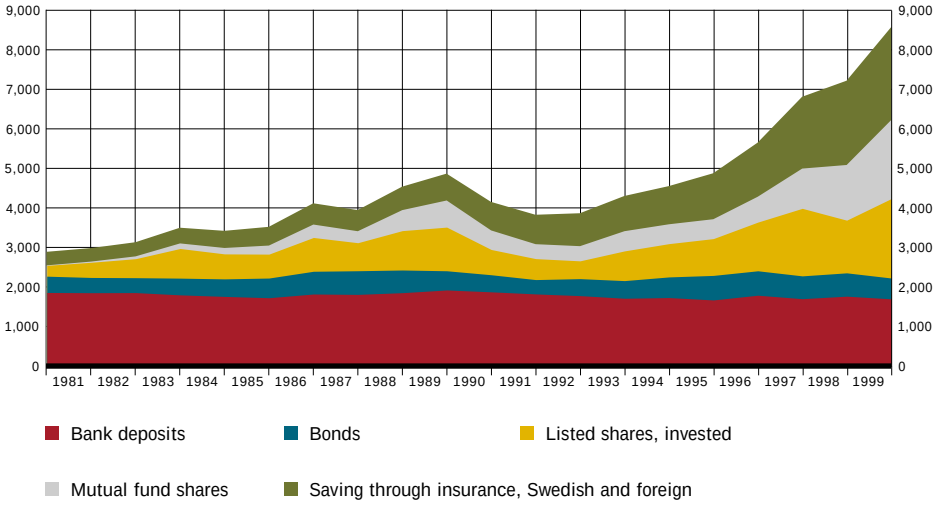
The increase in the price of houses (single family dwellings) in the country as a whole was 7 per cent in 1999. Prices are now above the highest level reached at the beginning of the 1990s (see Figure 12 in the Appendix). As in the early 1990s, the price increases are greater in the metropolitan areas. Stockholm has the highest rate of increase, 14 per cent in 1999, and 33 per cent over the last two years. Nevertheless, it is still difficult to believe that a collapse in prices is imminent in the Stockholm area when there is a housing shortage in most municipalities within the county of Stockholm, and when new construction is not sufficient for the projected number of new residents.

13 For explanation of "Confidence Indicators", see glossary.

14 For a more detailed discussion on asset prices, see Inflation Report 2000:1.

15 When a limited company goes into bankruptcy, the shareholders lose only their share capital, whereas a private person's liabilities do not disappear in the event of personal bankruptcy.

Figure 2:3.
Households' financial assets.
SEK billion, 1980 prices



Note. With effect from 1995, bond/money market funds are excluded from mutual fund shares.
Source: Statistics Sweden.

Lending by mortgage institutions for single family dwellings increased by 7.7 per cent during 1999, a rate which is only slightly higher than the rate of increase in prices. In comparison with the period immediately preceding the banking crisis, when prices were at their highest, the mortgage institutions' stock of loans for single family dwellings has increased by 30 per cent, while the prices of houses have risen by 8 per cent. This indicates that borrowing levels for single family dwellings have increased during the 1990s.

In an international comparison, it is clear that several other European countries, such as the UK and the Netherlands, have experienced a trend similar to Sweden's. Financial circumstances have improved as a result of higher incomes and rising asset prices. Households' indebtedness has also increased, mainly as a consequence of rising consumer credit.

HOUSEHOLDS' ABILITY TO PAY

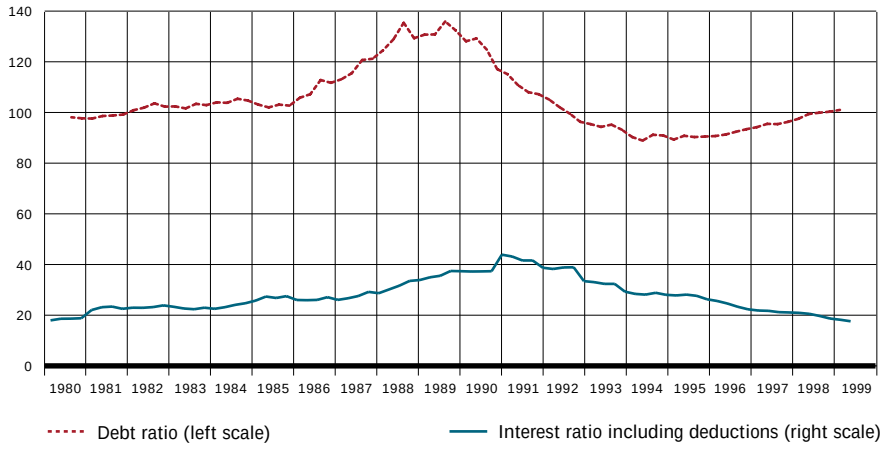
Households' ability to repay their loans depends on the development of their wages and wealth. The increasing lending to households need not lead to any problems if households' ability to pay is sufficient. Households' real *disposable incomes* have increased over the past two years, and are expected to continue to increase. There are several explanations for this development; reduced unemployment, relaxation of fiscal policy and rising real wages.

Households' financial wealth has increased markedly over the past few years.

Households' financial *wealth* has also increased markedly over the past few years. In 1999, households' net financial assets increased by SEK 392 billion, and now amount to SEK 1,573 billion. SEK 385 billion of this increase is due to increases in the value of shares and mutual funds, which shows that the increase in assets is due to increases in value, while new saving continues to be low.[16] Since the recession in the early 1990s, households' wealth has more than doubled in real terms (see Figure 2:3).

The households' debtburden is also affected by the interest rate situation. At the moment, nominal interest rates are low, which means that households' interest payments as a proportion of disposable income remain low (see Figure 2:4). The real interest rate after tax is currently around 3 per cent, which is relatively high (see Figure 13 in the Appendix). In the stability analysis, however, nominal interest rates are regarded as the most important, since it is these rates which determine whether households are able to repay their loans in the short term.

Figure 2:4.
Households' debt ratio and interest ratio.
Per cent



Note. The interest ratio shows households' cost of interest after tax deduction in relation to disposable income. The debt ratio shows households' debts in relation to disposable income.
Sources: Statistics Sweden and the Riksbank.

A change in short-term interest rates may have a significantly faster impact on households' finances than formerly.

In the previous report, it was noted that an increasing proportion of loans are made with variable interest rates. A large proportion of variable rate loans means that households are more sensitive to changes in interest rates. Variable rate loans remain at a high level (see Figure 14 in the Appendix). Short-term interest rates have certainly risen since the last report, but the difference between variable and fixed interest rates is still substantial, which is why many households are still choosing to borrow at variable rates. About 70 per cent of new lending is at variable interest rates. Any change in short-term interest rates may, therefore, have a significantly faster impact on households' finances than formerly.

RISK BUILD-UP IN THE HOUSEHOLD SECTOR?

As mentioned above, lending by finance companies has increased relatively rapidly. A large part of finance companies' lending is in the form of consumer credit, such as loans that are raised in connection with the purchase of capital goods. There are therefore indications that, to an ever-increasing extent, households are borrowing for consumption. This is confirmed to some degree by the fact that both car sales and retail sales have increased sharply during the last year. It is not surprising that this type of purchase has increased, given that many households probably had a pent-up need to consume after the recession of recent years. Likewise, the favourable prospects for the future presumably mean that households will risk consuming more. One explanation for why households borrow for consumption may be that they choose to retain their holdings of shares and mutual funds since they expect a higher return on these investments than the borrowing rate, instead of using their savings for their financing needs. Consuming unrealised increases in wealth through consumer credit does involve a risk that it will be difficult to meet payment obligations if the stock market should fall sharply or if the economic situation should deteriorate.

Consuming unrealised increases in wealth through consumer credit does involve a risk of difficulties in meeting payment obligations if the stock market should fall sharply or if the economic situation should deteriorate.

Rising asset prices also lead to an increase in the value of the assets which households can offer as security, i.e. it is possible to increase the borrowing on housing and shareholdings. Actual lending against shares has also increased. In December 1999, SEK 44.4 billion of lending by banks and securities companies was against pledges in shares. This is an increase of 30 per cent compared with 1998. In addition there is a risk that the rise in asset prices has involved "hidden" lending against shares. This would be the case, for example, if a house is pledged as collateral in order to finance investments in shares. At present, however, there are no reliable statistics on this area, which is why it is difficult to ascertain whether this lending is substantial. The degree of pledging on the stock market is still, however, very low, with 1.2 per cent of the value of the market pledged, compared with over 11 per cent in 1989, when pledging was at its highest. Nor has the fall in share prices during April appeared to affected households to any great extent.

From the point of view of stability, it is not the household sector as a whole or the average household which is most interesting. It is more important to study the spread of risk in the household sector, and to assess the situation in the most vulnerable households, since it is those in particular which experience payment difficulties in the event of a downturn in the economy.

In an attempt to investigate the situation in these households, the Riksbank has, in this report, made a special study, in which households are divided into 10 categories, deciles, according to the size of their

16 For many years, there has been a clear trend towards increased saving in shares and mutual funds relative to other forms of saving. In 1980, 9 per cent of households' financial wealth consisted of shares and mutual funds, in 1999 the corresponding figure was 49 per cent. Since about half of insurance saving is in shares or mutual funds, this means that just over 60 per cent of households' financial assets are dependent on the development of share prices (the corresponding figure for 1980 was 15 per cent).

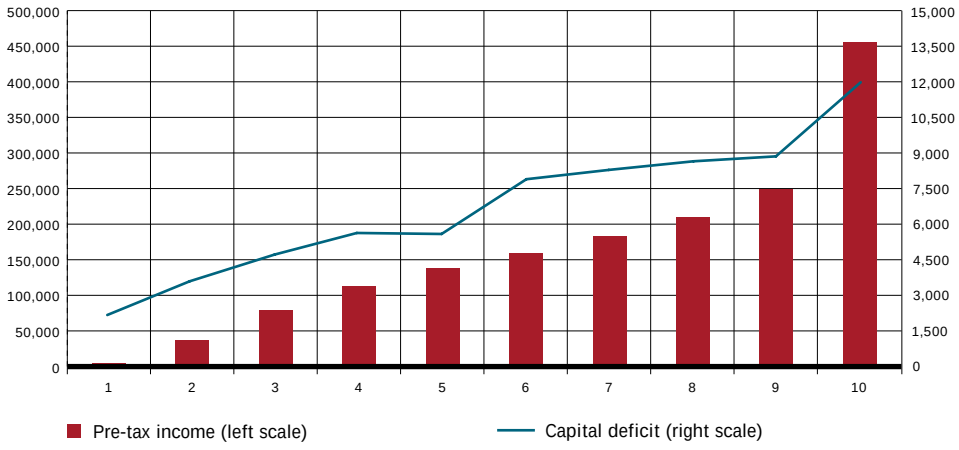
pre-tax income.[17] Studying the deciles provides a picture of the financial situation in the various income categories.

Despite the favourable economic trends, the risks for households with the lowest incomes appear to have increased slightly.

The data contains no information on indebtedness, but some pointers to the size of debts can be obtained by examining the item "capital deficit".[18] The material shows that it is persons with the highest income who have the largest capital deficit, i.e. the greatest deductions for loan interest, etc. (see Figure 2:5). From a stability perspective, this is a positive thing, since these households are presumably capable of repaying their loans even in a cyclical downturn. In the last two years, the deciles with the lowest incomes increased their capital deficits, albeit from very low levels, despite the fact that property holding has not increased. This could indicate that consumer credits have risen in this group. The opposite trend is seen among individuals in deciles with higher incomes, with reduced capital deficits and increased property holdings. At the same time as capital deficits have increased for the worst-off deciles, their income and wealth have also declined. Despite the favourable economic trends, therefore, the risks for households with the lowest incomes appear to have increased slightly. These households do, however, have a relatively low level of indebtedness, and should not, therefore, cause any major problems for the banking sector. For households with higher levels of indebtedness, both incomes and wealth have risen in recent years, which indicates that their ability to pay has improved.

To sum up, the financial situation for households is currently good. Lending is, however, increasing sharply and there are indications that consumer credit accounts for a growing proportion of this rise. There is also a tendency for an increasing number of households to receive investment income from more cyclically-dependent sources, such as profit-sharing systems, bonus programmes or income from capital from holdings of shares and mutual funds. If the banks were to take such irregular income into account in granting credit, this could lead to repayment problems in the event of an economic downturn. Since such forms of income vary more than earned income, this increases the risk of a reduction in the ability of households to pay, and of loan losses, in the event of an economic downturn. The banks, however, have become better at verifying borrowers, and in contrast to the 1980s, the ability to pay is kept in focus in granting loans. A further difference from the credit expansion of the 1980s is that we do not have the high inflation which, in com-

Figure 2:5.
Pre-tax income and capital deficits, 1999. SEK



Note. The x axis shows the deciles, whereby decile 1 comprises the 1,000 persons with the lowest income after tax, all the way up to decile 10, which comprises the 1,000 persons with the highest income after tax.
Sources: Business & Credit Information Agency and the Riksbank.

bination with the tax rules at that time, favoured borrowing over saving. The large proportion of variable loans does, however, mean that households are more sensitive to rising interest rates. Although this time, rising interest rates should not coincide with an economic downturn, as was the case during the last crisis, when the defence of the fixed exchange rate resulted in rising interest rates.

The development in the household sector appears to be more of a problem for individual households rather than a risk to the banks on a broad front.

Even though there is no immediate risk of problems in the household sector, the increased lending means that there is a build-up of risk, which may cause problems when the economic cycle turns downward. For lending to the household sector to lead to any substantial loan losses for the banks, however, several of the following macroeconomic changes would probably have to occur *simultaneously*:

- Decline in employment and reduced income for households
- Falling house prices
- Falling share prices
- Rising interest rates

How large the banks' loan losses will become in an economic downturn will probably be decided by how seriously these factors affect households. In short, the development in the household sector appears to be more of a problem for individual households, particularly in the metropolitan areas, not being able to settle their debts if income levels and asset prices fall, rather than a risk to the banks on a broad front.

17 A random selection of 10,000 unidentified people has been made from the Business & Credit Information Agency's database. It may, of course, be open to question whether "pre-tax income" is the best variable to use in classifying people. In this case this variable was considered to be the best for obtaining actual income, since it is not affected by deductions, etc. This classification method also allows comparisons to be made with Statistics Sweden's income surveys.

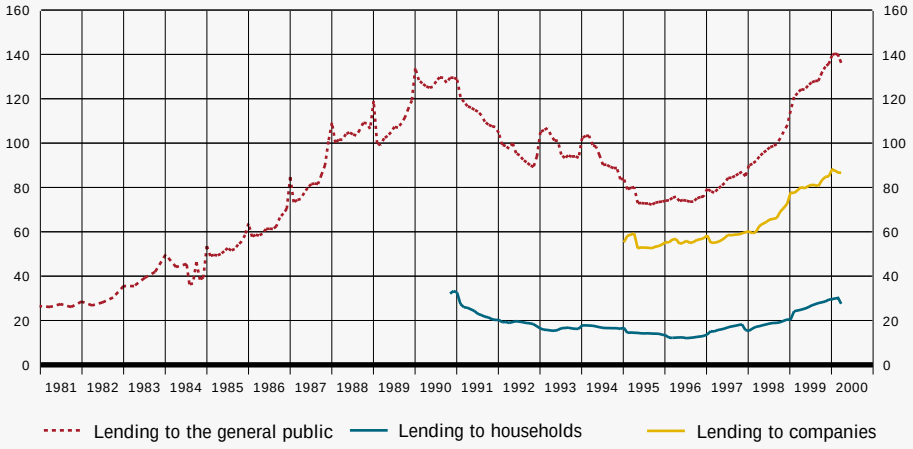
18 A person has a "capital deficit" if the total of capital expenses exceeds capital income, i.e. if the net of these sums is negative. Equating indebtedness with this variable is not completely fair, since share transactions, for example, affect this item.

THE FINANCE COMPANIES

At the beginning of the 1990s, Sweden was affected by a wide-ranging financial crisis, which threatened the whole financial system.[19] The first signs of this crisis appeared in autumn 1990, when the finance companies experienced difficulties in raising finance. This crunch came when the market judged that there was a risk that the beginning downturn in property and other asset prices would have an impact on the finance companies. The finance companies had a large volume of property loans which had been granted at high collateral values. Later, it emerged that the banks were very much affected by problems similar to those which first came to light in the finance companies. Since the banks had to a large extent financed the finance companies, failures among these companies gave rise to direct loan losses for the banks.

Currently lending by the finance companies is increasing (see Figure R:4). The question is whether this could lead to problems in these companies if the economy should turn downward. The finance companies' focus has changed to some extent since the 1980s. The greater part of their lending is now for leasing (more than half) and car financing, in contrast to the 1980s, when property financing was more significant. The finance companies' lending to households also consists of typical consumer credit, such as financing for capital goods other than cars. It appears that much of the increase in lending by finance companies is due to the fact that Sweden's relatively old fleet of cars is in process of being replaced. This is also confirmed by the substantial increase in car sales in recent years. For example, during the recession in 1993, approximately 11,000 vehicles per month were registered, while the corresponding figure today is 29,000. Leasing and car financing should not be regarded as particularly risky lending, which means that the risk of

Figure R:4.
Lending by finance companies.
SEK billion



Source: The Riksbank.

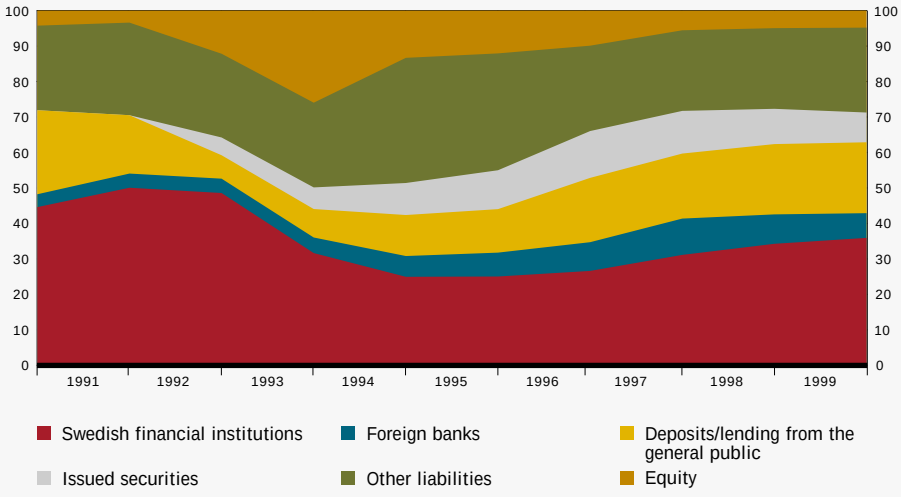
failures in the finance company sector is smaller than it was at the end of the 1980s.

The fact that the largest finance companies are owned by banks or other major companies means that the parent companies can provide support in the event of problems. This also means that, to a great extent, credit risks are handled at group level. At the same time, it also provides a direct link to the banks. Swedish banks and other financial companies are still responsible for a significant proportion of the financing of the finance companies, and this proportion has increased in recent years (see Figure R:5)

Overall, the finance companies appear stable, and the companies' operations may be regarded as involving considerably less risk than at the end of the 1980s. The rapid rise in lending does, however, justify monitoring developments carefully.

19 For a more detailed analysis of the Swedish banking crisis see, for example, Ekonomisk debatt 1998:1.

Figure R:5.
Liabilities of finance companies.
Percentage distribution



Source: The Riksbank.

The corporate sector

Historically, the corporate sector has been responsible for the greater part of loan losses. During the banking crises of 1992, for example, over 90 per cent of the banks' loan losses originated in the corporate sector. This section begins with an analysis of the development of lending to the corporate sector, followed by an analysis of companies' bankruptcy risks, and thereby the risks of loan losses. This analysis is carried out partly using a macroeconomic approach, partly from an aggregated corporate perspective and a market perspective.

LENDING

Corporate loans increased in March at an annual rate of 4 per cent.[20] This may be regarded as a moderate increase in lending in the light of the current excellent economic situation. Lending in relation to GDP has fallen slightly; in December 1999, lending constituted 51.9 per cent of GDP, compared with 52.6 per cent in December 1998. This should be compared with the beginning of the 1990s, when corporate loans amounted to over 70 per cent of GDP (see Figure 2:6). When corporate lending is divided into its various components, it shows that lending by mortgage institutions fell (minus 0.8 per cent on an annualised basis) while lending by banks increased (8 per cent on an annualised basis). The decline in lending by the mortgage institutions is probably due to the fact that the favourable economic situation makes it possible for companies to amortise their loans to a greater extent, while new lending is low due to the low level of activity in construction.

Some portion of companies' property loans has, presumably, moved to the banks. An examination of the securities accepted by the banks against lending shows that lending against collateral in commercial property has risen by almost 11 per cent in the past year, which goes some way to confirming this (see Figure 15 in the Appendix).[21]

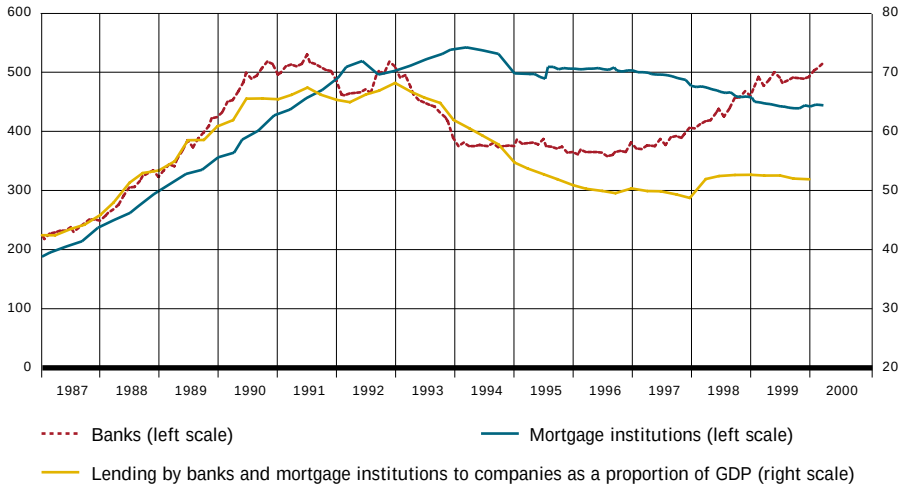
Corporate lending by the finance companies is increasing, as for households, relatively rapidly. In February, the increase was 10 per cent, compared with the same period in 1999. One explanation for this is that many finance companies are active in the leasing business. In a boom, this type of lending normally increases.[22]

20 Refers to lending excluding repos.

21 The items included here are security in commercial, industrial and agricultural property.

22 Leasing represents about half of the lending by the finance companies.

Figure 2:6.
Lending by banks and mortgage institutions to companies, and total lending as a proportion of GDP.
SEK billion and per cent



Note. Statistics Sweden changed the method of computation of GDP with effect from 1993. The Riksbank has recalculated the series prior to 1993, using the new method of computation.
Sources: Statistics Sweden and the Riksbank.

Overall, this means that the trend in lending in the corporate sector does not appear to be unreasonable in relation to the strong economic situation. Although companies are increasing their investments, they are not financing this through loans to any great extent.

BANKRUPTCY RISKS IN THE CORPORATE SECTOR

Bankruptcies in the corporate sector normally lead to loan losses for the banks (see Figure 16 in the Appendix). The banks are aware that a certain proportion of lending will result in loan losses, and they allow for this. Macroeconomic changes can, however, lead to large parts of the corporate sector being affected by problems *simultaneously*, and this lead to a general rise in the number of bankruptcies. At the moment, the number of bankruptcies is at a record low, although a small increase was noticed. The number of corporate bankruptcies in March amounted to 647, which can be compared with a peak of 2,148 bankruptcies in October 1992. Studying the macroeconomic environment in combination with aggregated accounts data and analyses of market prices can generate a picture of how bankruptcy risks are developing.

Macroeconomic perspective

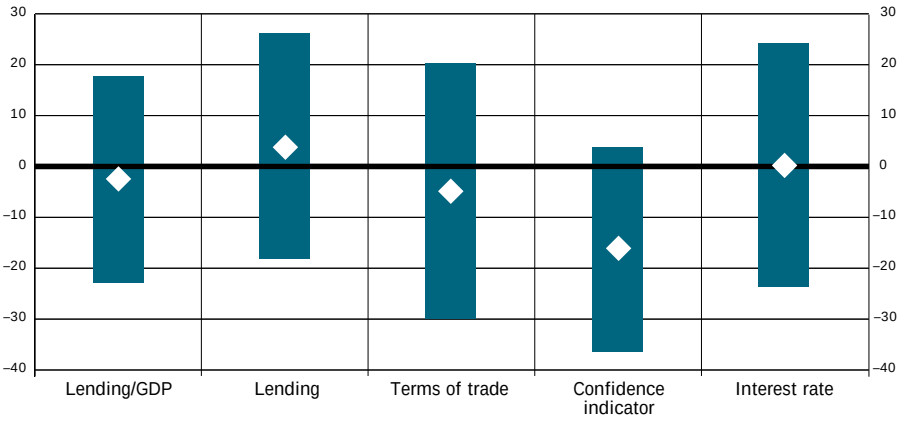
Macroeconomic developments have a significant impact on the trend in the number of bankruptcies. The Riksbank has developed a number of macroeconomic indicators of future bankruptcy trends.[23] A forecast based on these is shown in Figure 2:7. All indicators suggest that the number of bankruptcies will remain low, and may even fall. Since lending is currently increasing (albeit at a moderate rate), this factor indicates an increase in the number of bankruptcies in the future. When growth is also taken into account in the measure of lending/GDP, however, this indicates that the number of bankruptcies will remain low. This can be interpreted to mean that although lending is certainly growing, the rate of increase is not unreasonable in the light of the current phase of the economic cycle.

All macroeconomic indicators suggest that the number of bankruptcies will remain low, and may even fall.

Microeconomic perspective

To gain an impression of trends in corporate solvency and risk of bankruptcy at the level of the individual enterprise, i.e. from a microeconomic perspective, the Riksbank monitors data from accounts, such as interest coverage ratios and debt/equity

Figure 2:7.
Indicators of future bankruptcy trends (forecasts with a 1-year horizon).
Percentage change



Note. The point estimate is surrounded by an uncertainty interval indicated by a blue bar, based on the historical forecast error. The smaller the bar, the better the variable has been in forecasting future bankruptcies.
Source: The Riksbank.

ratios. Accounts information for 1999 is not yet available for all major companies, but there is nothing to suggest that the favourable trends of recent years, of falling debt/equity ratios and rising interest coverage ratios, have changed.

One way of utilising company-specific data more thoroughly is to take account of risk classifications produced by the Business & Credit Information Agency (UC). The classification process involves dividing companies into five different classes on the basis of how great the probability is judged to be of them becoming insolvent within two years.[24]

It is not the levels themselves which are of interest here, but rather how the proportion of companies in the different risk classes changes from one period of time to another. The figures for 1999 show that the negative trend from 1998 has been interrupted. The proportion of companies in the two risk classes with the lowest risk has increased from 71 per cent to 80 per cent. The proportion of companies in the two classes with the highest risk remains unchanged at 7 per cent. By far the largest fall has been in risk class 3, as companies have moved to classes with lower risk (see Figure 2:8). The trend in the past year can be regarded as positive. The increase in the proportion of companies at lower risk in comparison with 1998 can be explained by the fact that the weak development of the international economy affected the figures for 1998, while the current favourable economic situation is reflected in the figures for 1999.

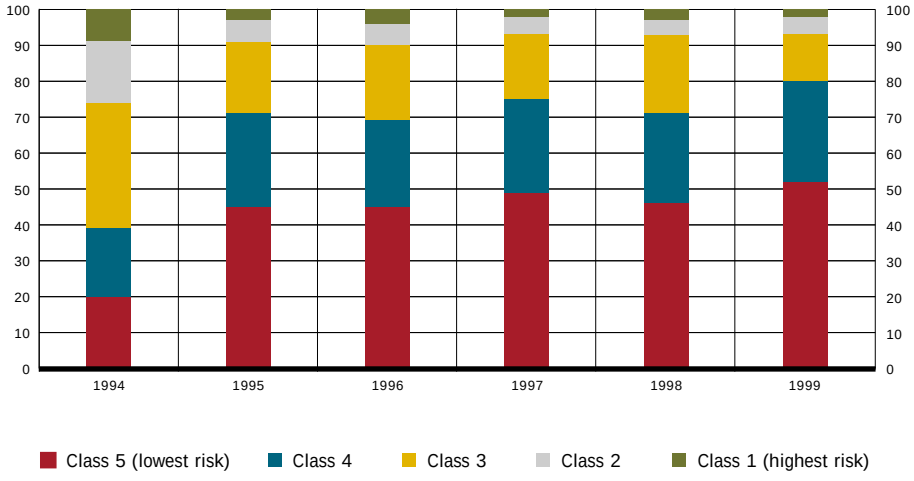
Market perspective

The problem with accounts data is that it is often published with a substantial time-lag. Utilising market information can give more immediate information on the situation in the corporate sector. KMV Corporation has developed a model which uses share prices, measures of volatility, and other information to calculate the probability of bankruptcy, known as the EDF (expected default frequency). The model can be used at both company and industry level. In a comparison of the EDF for non-financial companies in Sweden and other countries, it emerges that Sweden holds an excellent position internationally. The EDF for Sweden has risen slightly since the previous report, mainly due to the recent decline in the value of the stock market.

23 See article in Quarterly Review 2000:1.

24 This division is made partly on the basis of information from accounts, and also on the basis of information on the number of non-payments of debt, the age and size of the company, etc. Of the five risk classes, class 1 includes the companies most at risk, which UC recorded as having a probability greater than 25 per cent of becoming insolvent within two years. Class 5 contains the companies least at risk, with a maximum 1 per cent probability of insolvency within two years.

Figure 2:8.
Proportion of companies in different risk classes.
Per cent



Source: Business & Credit Information Agency.

The above analysis reveals that the situation in the Swedish corporate sector is currently very good.

Companies can cope with a deterioration in the macroeconomic situation without extensive suspensions of payments.

Overall, the bankruptcy risk in the corporate sector appears to be low in historical terms. The development of loan losses in the banks shows the same picture. As has been pointed out previously, loan losses have continued to fall, and are currently at a record low level. The conclusion in the previous report, that companies can cope with a deterioration in the macroeconomic situation without extensive suspensions of payments, therefore, still holds true.

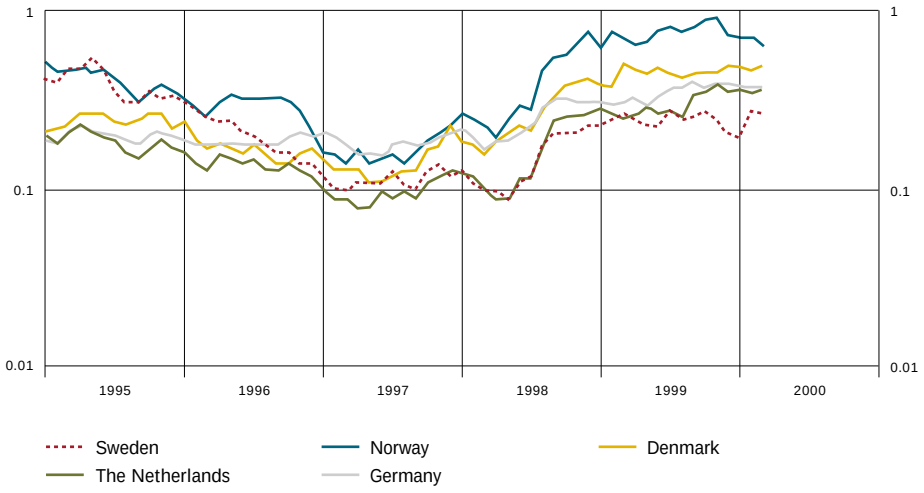
The property sector

In any analysis of financial stability, the property sector plays an important part. Since a substantial proportion of corporate lending by banks goes to this sector, properties constitute the most important form of collateral on the credit markets. This section examines the commercial property sector.[25]

In the recent past, property prices have risen substantially.

In the recent past, property prices have risen substantially. A fall in prices could lead to major problems for the banking sector. It is, therefore, important to try to evaluate whether current prices are sustainable in the long term. The first stage in such an evaluation is to describe present price trends. This is

Figure 2:9.
EDF for non-financial listed companies.
Per cent (logarithmic scale)



Source: KMV Corporation.

Table 2:1.
Price development for commercial properties and apartment buildings in 1999 (1998 in brackets).
Per cent

Type of property	Stockholm	Large cities	Provincial towns[26]	Small towns[27]
Commercial properties	11 (13)	11 (15)	–4,7 (13)	–1,7 (–0,6)
Apartment buildings	22 (32)	19 (21)	7,4 (7,3)	2,2 (4,7)

Source: Catella Fastighetsinformation.

followed by examining the relationship between demand and supply in order to assess whether the price trend appears to be sustainable or whether there are signs of excessive construction or speculative investment, which could give rise to a fall in prices. The consequense of a drop in prices depends largely on the solvency of the property companies which is why the final stage is to examine this.

PRICE TRENDS FOR COMMERCIAL PROPERTY AND APARTMENT BUILDINGS

Price trends have continued to follow the pattern described in the previous report:

- Prices are increasing most in the metropolitan areas, where demand is high.
- For commercial property in the major cities, prices and rents increase in tandem.
- Price rises for apartment buildings continue to be high and exceed the growth in rents, but follow price trends in tenant-owned apartments.
- Sales of apartment buildings occur almost entirely in connection with the conversion of apartment buildings into tenant-owned apartments.

Since the previous report was written, prices have risen sharply in the metropolitan areas, while provincial and small towns have seen prices hardly move, and in some cases, prices have fallen (see Table 2:1). For this reason, the Riksbank's analysis concentrates on the metropolitan areas (see Figure 2:10). It is also in these cities that a substantial proportion of the total value of the property stock is situated, and thereby also a substantial proportion of lending by the bank groups.

SUPPLY AND DEMAND

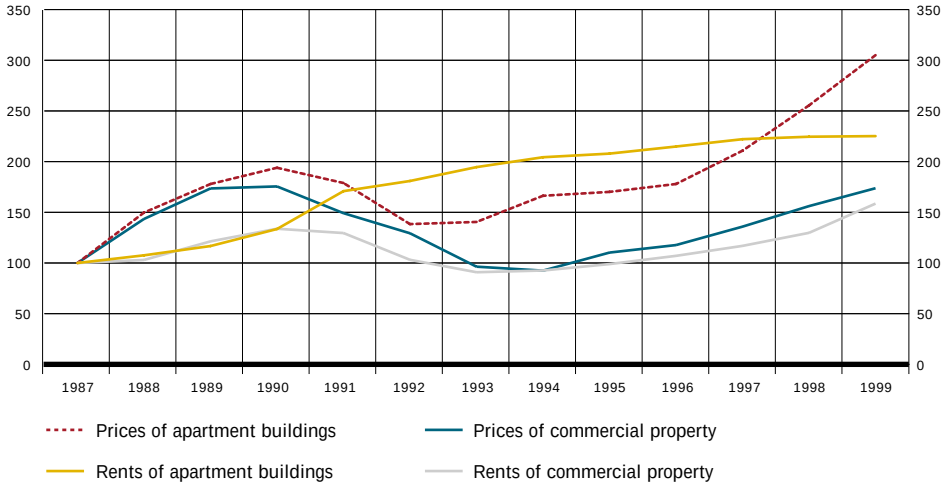
When a cyclical upswing begins, demand for properties increases, while initially the supply does not change. Long planning and construction times mean that it takes several years for an increase in supply to materialise. This creates demand pressure, which drives up prices. Rising prices can also encourage

25 Commercial property includes primarily retail and office properties.

26 Falun, Gotland, Gävle, Halmstad, Helsingborg, Jönköping, Kalmar, Karlskrona, Karlstad, Kristianstad, Landskrona, Linköping, Luleå, Lund, Norrköping, Skövde, Sundsvall, Umeå, Uppsala, Västerås, Växjö, Örebro and Östersund.

27 Alingsås, Borlänge, Borås, Enköping, Eskilstuna, Falkenberg, Hudiksvall, Härnösand, Järfälla, Kungälv, Karlskoga, Lidköping, Ljungby, Ludvika, Sandviken, Skellefteå, Strängnäs, Söderhamn, Södertälje, Trelleborg, Uddevalla, Värnamo, Örnsköldsvik.

Figure 2:10.
Developments in prices and rents for apartment buildings and commercial properties in the metropolitan areas.
Index 1987=100



Source: Catella Fastighetsinformation.

speculative investment in property, which inflates prices still further.

Rising prices can lead to an excessive number of property projects being started. Miscalculations can involve an under or over supply of properties, with the corresponding effects on prices. The greatest property crashes tend to occur when a recession coincides with the completion of too many new properties. This was the case during the initial phase of the banking crisis, when a large number of new properties were completed just as the cycle turned downward.

To gain an idea of the current *demand* situation, a possible approach is to look at the change in the number of job vacancies in a region. This measure is a good indicator of increasing demand for properties and of price increases. With respect to demand for housing, the net influx of population is another important indicator. In Stockholm, the number of job vacancies is expected to increase as a result of the boom. This probably means that there will be a continued high influx of people into the region. In Gothenburg and Malmö, the number of jobs is also expected to rise, although at a more moderate rate.

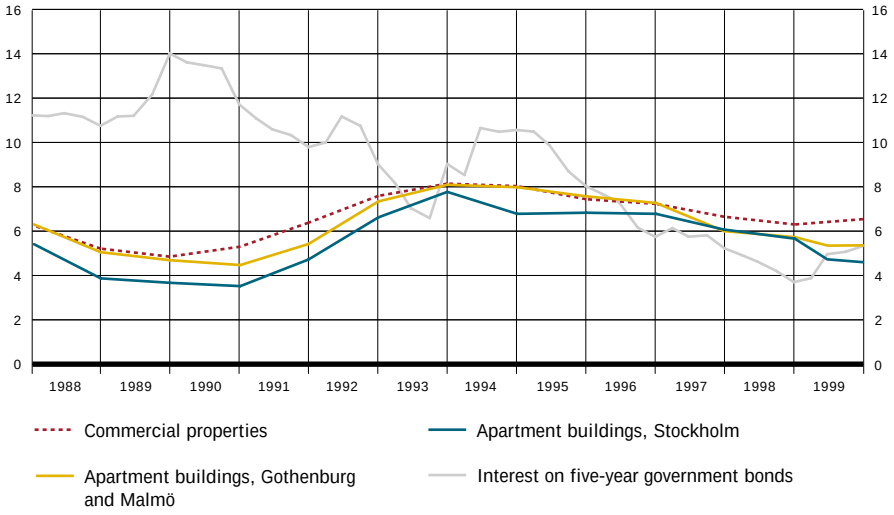
Overall, this means that demand for premises and for housing in Stockholm and other metropolitan areas is expected to rise. This picture is further strengthened by the low vacancy ratios in office buildings and apartment buildings in the metropolitan areas. The increased demand means that some companies move into less attractive premises and utilise a smaller working area per employee, in order to reduce their cost for premises.

Statistics show that there is high demand for business premises in Stockholm, and that smaller premises are the most in demand, which indicates a more efficient utilisation of existing premises.

Demand for premises and for housing in Stockholm and other metropolitan areas is expected to rise.

An examination of the *supply* of properties shows that investment in buildings increased by 3 per cent during 1999. Investment in housing in particular increased, by 19 per cent in 1999. There was also an increase in building permits, which indicates that the increase in residential construction is set to continue. As regards commercial property, new construction is taking place only in areas where demand is high. Companies seem to have adapted to the prevailing conditions, by moving to more peripheral areas, and by reducing the area they utilise in existing premises. One effect of this is that the market will adjust more smoothly in a future cyclical downturn, compared with the situation if new construction rep-

Figure 2:11.
Direct yield on commercial properties and apartment buildings in the metropolitan areas and interest on five-year government bonds.
Per cent



Sources: Catella Fastighetsinformation and the Riksbank.

resented a greater proportion of the adjustment to the increased demand for business premises. This can also be expected to make price adjustments more moderate.

Overall, this means that the demand for property, especially in the metropolitan areas, is greater than the supply. The high level of demand, with the resulting rising prices, has led to increased construction. Investment in construction remains, however, at a historically low level, and in contrast to the situation at the beginning of the 1990s, most of the premises being built at present are let even before construction starts. This implies that the risk in new construction should be low.

SPECULATION?

By analysing the direct yield on properties, one can gain an idea of whether there are any tendencies towards speculation in the pricing on the property market. Direct yield indicates the size of the rental income, after deduction of operating expenses, which a property can be expected to generate, expressed as a percentage of the price of the property (see Figure 2:11).[28]

A comparison of the direct yield with the required return on property investments provides a rough indication of expectations for the real increase in value for properties. If the direct yield is below the required return for the investment, investors must expect a compensating rise in value.

The required return on property investments can be calculated as the risk-free interest rate plus a risk premium.[29] Using a traditional CAPM model, the required return can be estimated to be around 7 per cent. The direct yield on properties is now 6.5 per cent in the metropolitan areas. This means that prices must increase by about 0.5 percentage points per year, if total returns are to equal the required return. Such a rate of increase appears reasonable since economic growth is high, and long-term inflation expectations are about 2 per cent per year. Accordingly, this measure indicates that investment decisions are not based on speculative price expectations. From the level of direct yield, it appears that prices and rents for commercial property are in balance, and that some increase in price can take place without this balance being upset.

For apartment buildings, the price levels do not tally with rent levels. The market for residential properties in the large cities is now completely dominated by the conversion of rented apartments to tenant-owned apartments, which is driven by the fact that a residential property in an attractive location is worth considerably more to a tenant-owners association than it is to a landlord. The rapidly rising prices for tenant-owned apartments over the past year have reinforced this difference in value. As a result of the conversion activity, many property owners have been able to realise substantial profits on sales to tenant-owner associations. For the banks, this means that individual borrowers in the form of landlords are being replaced by tenant-owner associations and a collective of tenant-owners, which, especially in attractive areas, should reduce the risk in lending.

Any attempt to assess the sustainability of the prices of apartment buildings must, therefore, take account of the sustainability of the prices of tenant-owned apartments. In the Stockholm area, the substantial rise in prices is probably governed by an increase in demand driven by rising incomes among certain groups and a considerable influx of people. Although investment in construction is increasing, the supply is still very low, which contributes to the upward pressure on prices. The development in the value of tenant-owned apartments is affected in

28 The calculations of direct yield in this report were made by Catella Fastighetsinformation.

29 The risk premium is calculated as the risk premium which the stock market requires for property companies, i.e. it is assumed in the calculation that the risk premium for individual properties is at the same level as the risk premium for listed companies. The calculation of risk premium is based on the CAPM model of the relation between risk and return. In this approach, the return on an asset should be the risk-free yield, the interest on government bonds, plus a risk premium. The risk premium for every asset is the same as the asset's own risk measured as the covariance between the yield on the asset and the market yield, i.e. ß value times the risk premium on the market as a whole. The weighted average of the value of listed companies is 41 per cent. Consequently, the yield is equal to: risk-free interest + $ß_{\text{listed property companies}} *$ market risk premium. The measured ß value is governed by the level of volatility of property shares over recent years. Since these shares showed particularly low volatility during the current period, it is possible that the risk compensation provided by this model is somewhat low in relation to the actual required return of property investors.

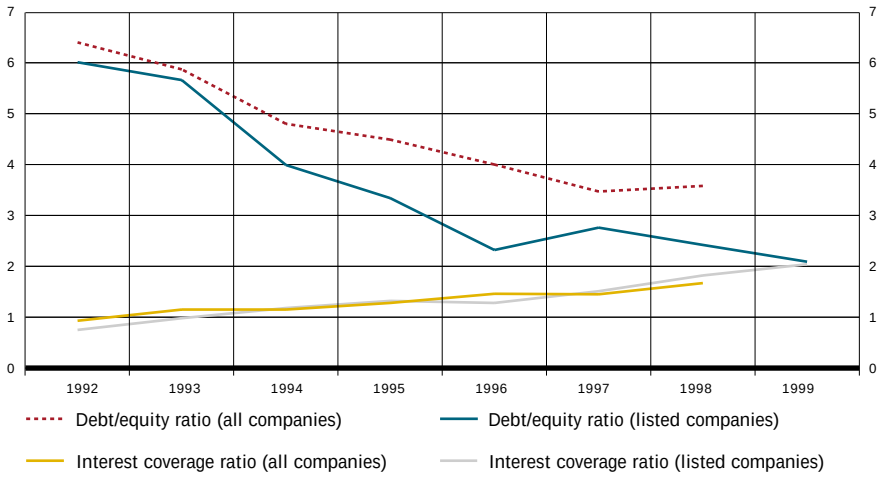
addition by the formation of housing and tax policies, for example how tenant-owned apartments are taxed in comparison with detached houses. Experience has shown that it is difficult for the banks to evaluate the effects and likelihood of any change in policy. From this point of view, the banks can be caught out by events. In this connection, it is worth observing that the bank groups do not have large exposures to tenant-owned apartments and tenant-owner associations. Lending by mortgage institutions for tenant-owned apartments amounts to 4 per cent of their total lending, and this shows no sign of increasing. Since their exposure is limited, any potential effects on the banks will be small.

The high level of prices for tenant-owned apartments involves a risk that the values of rental properties will also be driven up.

The high level of prices for tenant-owned apartments involves a risk that the values of rental properties will also be driven up. Expectations of future conversion or the loosening of the system of rents based on utilisation value could contribute to price rises. A high level of borrowing in properties which are not yet sold may lead to problems at a later stage if, for any reason, the sale does not take place. It is, however, difficult to see that this would happen to such an extent that it would pose a serious threat to the banks.

In summary, there is no evidence that investment in commercial property is being made as a result of speculative expectations of future price increases. For residential properties, the price levels are more difficult to assess, since prices are affected by rent controls, the structure of taxation and the price formation for tenant-owned apartments. Prices of tenant-owned apartments have risen substantially recently, partly as a result of an increased influx of people and the low level of new construction. If tenant-owned apartments were to fall in price, this would not entail problems for the banks, since they have low exposure to tenant-owned apartments and tenant-owner associations, so the risk of losses is minimal. More crucial would be the effects on the prices of apartment buildings. Expectations of a relaxation of the system of rents based on utilisation value and expectations that properties could be converted to tenant-owned apartments can contribute to price rises. If these expectations are not fulfilled, major price corrections could result. Although the price movements are significant, the concentration in the large cities means that the effects of a price fall would be limited.

Figure 2:12.
Interest coverage ratio and debt/equity ratio for property companies.
Ratios



Sources: Business & Credit Information Agency and annual reports.

SOLVENCY OF PROPERTY COMPANIES

A prerequisite for property-related loan losses to arise in the banking sector is not only that property prices fall, but also that there are serious weaknesses in the financial condition of property companies.

Information for 1999 on the progress of all property companies is not yet available, and so the listed property companies are used as an indicator of the development for the sector as a whole.

The sensitivity analyses carried out by listed property companies show that their profits are affected most by changes in the general interest rate situation, and secondarily by net rental income. Currently, interest rate levels are low, and rents high. Consequently, the financial situation in listed property companies is satisfactory. The interest coverage ratio of the listed property companies has risen to 2.0 per cent, while their debt/equity ratio is 2.1 per cent (see Figure 2:12).

While indicators from the accounts show that there was an improvement in the financial situation of property companies during 1999, bankruptcy forecasts for this sector paint a more cautious picture (see Figure 20 in the Appendix). According to the forecasts (EDF), the bankruptcy risks for property companies do not appear to have changed appreciably in the past year. From a historical perspective, however, the bankruptcy risks of property companies can be regarded as low.

Overall, the solvency of the property companies appears to be good at the moment.

The listed property companies have shown an interest in increasing their indebtedness, partly as a result of the low level of interest in property shares. An increased level of indebtness would lead to increased credit risks for the banks relative to these companies. However, it is uncertain whether unlisted property companies will choose the same strategy, since they already are comparatively highly leveraged.

Overall, the solvency of the property companies appears to be good at the moment. What will, however, be crucial is the way the property companies decide to utilise the substantial cash balances they currently hold.

CHAPTER 3

Counterparty and settlement risks in the banking sector

In preparation for the new millennium, the banks reduced their large counterparty and settlement exposures relatively sharply. Even so, the largest single exposure according to the Riksbank's survey at the year-end was on average for the major banks as large as 38 per cent of Tier 1 capital. The Riksbank considers that the current rules on large exposures are deficient in some respects, and the Riksbank intends to work for these to be changed.

The size of counterparty and settlement risks

Counterparty and settlement risks arise in every area of financial trading. The risk of loan losses resulting from exposure to banks and other financial institutions differs in several respects from the banks' other credit risks. Lending to households and companies is, to a great extent, well diversified, and the risk of substantial loan losses would only arise if a large number of borrowers were to be hit by payment problems simultaneously. With exposures to financial institutions, the probability of failures is lower than with lending to households and companies. On the other hand, individual exposures are more concentrated than with other forms of lending, particularly where large, highly-reputable banks and financial institutions are involved. Since exposures between banks can have systemic effects if one bank experiences problems, they constitute a potential threat to the stability of the financial system as a whole.

This has led the Riksbank to collect specific information from the four major Swedish banks relating to the size of their individual exposures (see box below).

The *total exposure* of the four major banks in the reporting on 31 December 1999 amounted to SEK 651 billion.

The degree of concentration in the exposures of the major Swedish banks is high.

The degree of concentration in the exposures of the major Swedish banks is high. On average, the fifteen largest counterparties are responsible for 29 per cent of total exposure. The average single largest counterparty alone is responsible for 8 per cent of total exposure. The size of the exposures falls rapidly, and the fifth largest counterparty is responsible for 1.5 per cent of the total exposure.

To gain an impression of the size of individual exposures in relation to the banks' operations and the effects that the failure of one counterparty could lead to, the exposure can be placed in relation to the banks' Tier 1 capital. Tier 1 capital must constitute at least 4 per cent of a bank's risk-weighted volume, and is intended to serve as a buffer against losses.

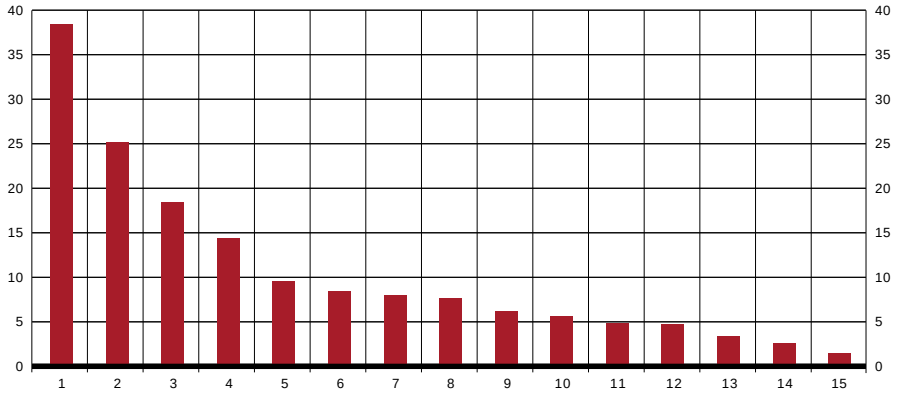
THE RIKSBANK'S DATA ON INDIVIDUAL EXPOSURES

The Riksbank has collected specific information from the four major Swedish banks relating to their largest individual exposures. The information reported covers exposures where more substantial uncollateralised credit exposures can be considered to exist; these include derivative exposures, holding of non governmental securities, interbank lending and settlement risks in foreign exchange trade. Exposures within the first three areas have been added together to provide a total exposure per counterparty. On the basis of this, the 15 largest counterparties have been ranked in order of size. For these counterparties, settlement risks in foreign exchange trading have also been stated, as well as exposures in various forms of secured lending, primarily repos and equity loans. In addition, the banks' total exposure within each area has been stated. The fifteen largest exposures to settlement risks in foreign exchange trading have also been reported individually, with specifications of the currency pairs the exposures consist of. Reporting in the present form took place for the first time on 30 June 1999, and has taken place on a further two occasions since then; 30 September 1999 and 31 December 1999.[30] One shortcoming of the survey is that it only relates to exposures on a given day, which makes it difficult to draw conclusions, since exposures can change very rapidly. As the survey is new, and to some extent includes exposures that can be measured in different ways, there is also a risk that the survey may have certain quality defects. The reporting nevertheless provides an overall picture of how large exposures can be.

30 A survey aimed at measuring exposures within various segments over a two-week period was carried out in autumn 1998.

The fifteen largest individual exposures are equivalent on average to 139 per cent of the Tier 1 capital. The largest individual exposure is equivalent to 38 per cent of the Tier 1 capital, while the combined share of the two largest is equivalent to 64 per cent (see Figure 3:1). This means, for example, that a bank with a Tier 1 capital ratio of 7 per cent is just over the minimum limit, with 4.3 per cent Tier 1 capital remaining if the largest counterparty should fail. It has become increasingly common internationally to make an assessment of the effects of the failure of the two largest counterparties. In this case it would result in a remaining Tier 1 capital of 2.5 per cent, and in principle this would mean that the bank would not be allowed to continue to pursue banking activities. There is a considerable spread

Figure 3:1.
The fifteen largest exposures on average for the four major banks as a percentage of Tier 1 capital



Source: The Riksbank.

between the banks here, which makes the average somewhat misleading. At the same time, these arithmetical examples are extreme in one sense, since they assume that the bank will lose an amount equivalent to the total exposure towards the failing counterparty. Although the total exposure is reduced by collateral and netting, recoveries would probably make losses considerably lower. The structural transformation currently in progress in the banking sector will probably lead to an increase in the concentration of exposures. At the same time, it is estimated that Tier 1 capital will decline over the next year (see Chapter 1 for a discussion of this), and this will increase vulnerability in the event of failures of individual counterparties.

The structural transformation currently in progress in the banking sector will probably lead to an increase in the concentration of exposures.

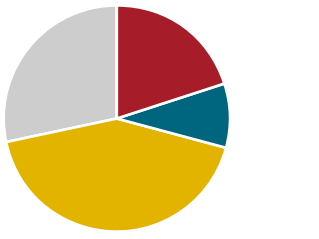
The above calculation refers only to the consequences of direct exposures to the failing counterparty. Since concentration is high, it is likely that other counterparties will also be exposed towards the failing counterparty, and this could result in another wave of losses. It should be pointed out that the probability of the two largest counterparties failing simultaneously is not particularly high, and that the above example does not take any possible recovery into account. Even if it were possible to recover a large part of the exposed amount in the event of a failure, such a procedure often takes considerable time, and a liquidity shortage may arise. The four major Swedish banks have a number of common counterparties among their largest exposures, which means that several of the Swedish banks would be affected at the same time in the event of a failure of any of these counterparties.

The Riksbank's survey concentrates on four types of exposure: *derivative exposures*, *holdings of non governmental securities*, *interbank lending* and *settlement risks in foreign exchange trade*.

Derivative exposures amounted to a gross of SEK 141 billion for the four major banks. The effects of netting are important here. Netting means that the off-setting credit positions that two parties have in relation to one another can be netted if either of them suspends payments. Derivative exposures amounted net to a total of SEK 60 billion, which is equivalent to 9 per cent of total exposures (see Figure 3:2). A special risk associated with derivatives is that their value is only a function of the underlying value of the assets. The substantial leverage effect of this type of instrument entails that exposures can change considerably in the event of movements in the market. The concentration of derivative exposure is high—the fifteen largest counterparties represent 35 per cent of total net exposure.

The portfolio of *non governmental securities* as of 31 December 1999 amounted to SEK 275 billion, and in this survey constitutes the largest proportion of total exposure, 43 per cent. This exposure is also highly concentrated. The fifteen largest counterparties are responsible for 30 per cent of total securities exposure. The predominant part of the banks' securities holdings consists of Swedish mortgage securities. It is, accordingly, largely a matter of exposures towards the major Swedish banking groups. In addition to the reported holdings of securities, the banks also hold large volumes of mortgage securities issued by their own mortgage institutions, SEK 49 billion,

Figure 3:2.
Breakdown of the total exposures of the four major banks, 31 December 1999. Per cent



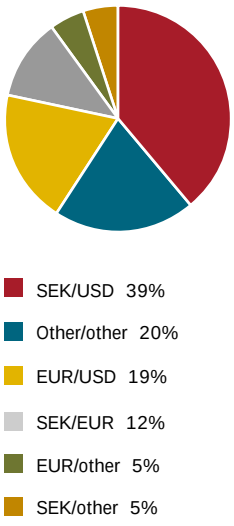
Source: The Riksbank.

which contributes to create links between bank and mortgage institution in the same group. Foreign issuers are not found to any great extent in the circle of the largest counterparties.

As per 31 December 1999, the exposures of the four major banks in the market for *interbank* loans stood at SEK 83 billion, and therefore represented 28 per cent of total exposures. The fifteen largest counterparties were responsible for 32 per cent of total exposures in the interbank market. In general, this lending is short-term. In the Riksbank's survey in August 1998, 56 per cent of the lending on the interbank market was in overnight loans, and only 17 per cent had a maturity of over a month.

Settlement risks in foreign exchange trade gave rise, at the time of measurement, to exposures of SEK 133 billion, which is equivalent to 20 per cent of total exposure. The corresponding figure in the previous survey was almost four times as great. These exposures are normally highly volatile, but the low figure for 31 December 1999 should not be taken as representative, since the banks had tried as far as possible to reduce their exposures over the Y2K period. This was done partly through interbank foreign exchange deals being concluded on 14 January 2000 rather than 31 December 1999. The settlement risks in foreign exchange trade involve very short exposures, since on average they arise for a period of about two days. The fact that exposures are shorter also reduces the probability of loan losses occurring. This is due to there being a smaller risk of a counterparty's credit worthiness deteriorating over a shorter time-span, such as two days, than over a long period, such as a year. The smaller risk is related to the fact that if information about the credit worthiness of a counterparty reaches a bank, that bank can decide to reduce its exposure, if the positions involve a short maturity. This possibility lessens with longer maturities. Exposures involving the settlement of foreign exchange trades, therefore, entail less risk than longer commitments, although the Riksbank considers that they should still be regarded as unsecured loans. Concentration is very high. The fifteen largest counterparties are responsible for 55 per cent of total settlement exposure. The average largest single counterparty is responsible for 13 per cent. There are, however, considerable variations between the banks, which can make the average figures misleading. The largest counterparties in foreign exchange trade are often not the same as for other exposures.

Figure 3:3.
Breakdown of the exposures of the four major banks to settlement risks in foreign exchange trade by currency pairs, 31 December 1999.
Per cent



Source: The Riksbank.

In the last two reports, settlement exposures have also been broken down by *currency pair*.[31] The breakdown as of 31 December 1999 demonstrated that the SEK/USD currency pair represented the largest proportion, 39 per cent (see Figure 3:3). This is due to the fact that USD is the foremost trading currency, and is the denominating currency for other currencies. Other/other accounts for 20 per cent of exposures, EUR/USD for 19 per cent and SEK/EUR only comes in fourth place with 12 per cent. As we stated in the previous report, the length of exposure varies between different currency pairs, depending on time zones and the opening hours of the different national payment systems.

With efficient settlement procedures, it should be possible to shorten exposures in the SEK/EUR currency pair to only comprise an intra-day expo-

31 The currency pairs used in the reports are SEK/EUR, SEK/USD, EUR/USD, EUR/other, SEK/other and other/other. Other currencies in this case could be, for example, NOK, BRL, JPY or GBP.

sure for trades with Swedish counterparties, since the Riksbank, since the beginning of 1999, has provided parallel settlement systems for SEK and EUR (RIX and E-RIX).

Ignoring differences in time zones and national payment systems, the principal methods for reducing time periods are improvements in internal procedures and agreements with correspondent banks. In the present situation, the outstanding amount can be reduced through bilateral netting. The only way to eliminate settlement risk completely is for payments to be made in accordance with the *payment-versus-payment* principle. The launch of the *CLS Bank* makes it possible to introduce this principle. When the bank starts operating, it will be able to reduce settlement risks considerably. Since the Swedish krona will not be part of the system from the start, we can, however, state that, on the basis of the diagram above, at least half of trades will be settled outside CLS, and settlement risks in foreign exchange trade will, therefore, continue to be extensive. The next section contains a more detailed description of how it is envisaged that the CLS Bank will work.

Crucial for the banks' exposure to counterparty and settlement risks is their risk management. In the previous Financial Stability Report, there was an analysis of how risk management in the banks has developed over the past year. Within risk management, another type of risk, which until now the Riksbank has not devoted attention to in the Financial Stability Report—operational risks. As the banks' trading activities have increased in extent, these risks have come increasingly into focus. These risks are described in greater detail in the box below.

OPERATIONAL RISKS

During the second half of the 1990s, a string of spectacular events in the financial sector aroused a great deal of interest in the mass media.

- In February 1995, it was revealed that Nick Leeson, General Manager and Head Trader at *Barings Futures Singapore*, had managed to bankrupt the owners, *Barings Bank*, by taking and concealing trading positions which gave rise to total losses of GBP 827 million. The losses after the liquidation of the bank amounted to almost GBP 1 billion.
- In July 1995, Toshihide Iguchi of *Daiwa Bank's* New York branch confessed that, over a number of years, he had forged transaction confirmations to enable him to sell securities owned by *Daiwa*'s clients. The cost to *Daiwa Bank* amounted to about USD 1.1 billion plus a substantial fine, as well as irreparable damage to the bank's reputation with clients and the supervisory authorities.
- In June 1996, the Japanese bank, *Sumitomo*, dismissed copper trader Yasuo Hamanaka after transactions which caused the institution losses of approximately USD 2.6 billion. In consequence of this, the Chairman of *Sumitomo*, Tomiichi Akaiyama, also lost his job.
- In September 1996, it emerged that fund manager Peter Young had been deceiving his employers, *Deutche Morgan Grenfell*. Losses of around GBP 400 million came to light, and one of the consequences was that the Manager of *Morgan Grenfell Asset Management* was asked to resign.
- Similar incidents have also taken place in Sweden, for example in *Nordbanken* and *Hagströmer & Qviberg*. However, no such incident in Sweden has ever involved such large amounts as to threaten the existence of the institution in question.

These events are well-known from the reports in the press, and they are examples of *operational risks* which had serious consequences for the institutions in which they arose. These and similar events have made it crystal clear to the managers of many financial companies that at least as much attention must be paid to operational risks as to market risks and credit risks if they are to protect their company from disasters that could threaten its very existence.

So what are operational risks? There is, as yet, no generally accepted definition, but according to a recent study carried out by the British Bankers Association, ISDA and Robert Morris Associates, the following view

of operational risk seems to be gaining currency in the financial sector: "Operational risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, and systems or from external events". Whether this particular definition will become established throughout the sector remains to be seen. It is clear that operational risks include risks resulting from shortcomings in a bank's control systems, but also risks of losses stemming from technical problems, such as computer crashes, come under this classification.

Extensive structural transformation and changes in the banks' operations have increased operational risks. In many banks, for example, trading activities have increased considerably in relation to more traditional bank operations. This has generated new types of operational risks for the banks. Economies of scale, with new technology and outsourcing, have made the processing of bank transactions cheaper, but at the price of an increasing concentration of operational risks. The rapid rate of change in the banking sector is in itself a source of increased operational risks. It is hardly surprising that many of the larger financial companies are currently involved in developing techniques to measure and manage operational risks.

The authorities are also paying increasing attention to operational risks. When the Basle Committee on Banking Supervision presented its proposals for new regulations for capital adequacy in June 1999, it was proposed that the increasingly sophisticated capital adequacy requirements for credit and market risks should be supplemented by a capital requirement for "other risks". The most important of these were said to be precisely these *operational risks*, but *legal risks* and *reputational risks* are also part of the "other risks" to be included in the capital requirement. In connection with the discussions on how to introduce a specific capital requirement for "other risks", the crucial question was how these should be defined and measured. Since operational risks and the rest of the "other risks" are composed of a number of factors, they are not easy to quantify. There are, accordingly, considerable difficulties in calculating capital requirements for these types of risk.

Operational risks are, however, often regarded as being easier to calculate than, for example, legal risks and reputational risks. It is possible to compile databases of operating problems and so on, and to estimate operational risks in a certain business area from the collected data. On the initiative of the Global Association of Risk Professionals (GARP), discussions are currently in progress to create a common database of operating losses to which the banks can connect. One aim behind the initiative is probably to demonstrate to the Basle Committee and others that they are capable of taking action to quantify operational risks. The British Bankers Association is also involved in drawing up a database for operational risks.

One of the approaches discussed by the Basle Committee is to try to estimate the inherent risks in every business area within a bank. The figures are then added together, and converted into a capital requirement for operational risks. One problem with this method is that it takes no account of links and correlations among various components of operational risks. Moreover, the most important sources of a loss are not always easy to identify. In the Barings Bank case, it is often said that a number of factors came together to cause the loss that led to the downfall of the bank. It was a combination of inadequate personal supervision, rapid expansion of business abroad, lack of separation between front office and back office, volatile markets and uninformed bank management which made for a high operational risk. Not even after the fact would anyone try to quantify each of the individual risk factor's contribution to the total loss.

There is also a great difference between operational problems which occur frequently, but with relatively minor financial consequences, and events for which the probability of their occurring is very low, but which would have considerable financial consequences if they were actually to occur. These last include, for example, complete computer failure and major fraud. These low-frequency events with massive consequences for the bank are the ones which are of obvious interest from a systemic perspective. Statistical methods which are predominantly based on data about frequently-occurring problems with minor consequences, are therefore, not always the best for calculating the really interesting risks. On the other hand, systematic measures to identify deficiencies in operational procedures in general can have the positive side effect of increasing awareness in the bank as to where the really important risks lie.

Operational risks also differ from credit and market risks in that there is normally only a negative relationship between risk and return. Banks cannot increase their returns by increasing their operational risk-taking.

They should, therefore, have a natural interest in wishing to reduce these risks. On the other hand, reducing risk involves expenses. From this discussion it also follows that the banks themselves do not necessarily possess the greatest comparative advantages when it comes to lowering operational risks. Consequently, insurance solutions, for example, may be a financially effective way of reducing certain kinds of operational risks. This assumes, naturally, that there is a well-developed insurance market. In balancing cost and risk, the premiums in many cases would be regarded as too high.

Another circumstance which makes "other risks" different from credit and market risks is that, typically, they are not correlated between different institutions. It is not unreasonable to assume that market crashes and economic shocks could affect many banks simultaneously and in a relatively similar way, while, for example, computer failure would probably only affect one bank at a time. This means that systemic risk resulting from operational risks have a rather different character than those which have other causes. That is not to say that the bankruptcy of an individual bank could not have serious repercussions on other banks in the system, irrespective of whether the cause of the bankruptcy is fraud or bad loans.

CLS Bank and PvP

In foreign exchange trade, one currency is sold against another, and the payment flows therefore, go in both directions between two counterparties. The problem is that a time lag arises between payment and delivery of the currency purchased and thereby also credit risks. In connection with the publication of the G10 report in March 1996, the market was given a respite for dealing with the risks.[32] Unless risk management was improved, proposals would be made for regulations of the area, for example by introducing capital adequacy requirements for settlement risks in foreign exchange trade. The CLS Bank may be said to be the markets response to this. CLS is the acronym for *Continuous Linked Settlement*. The initiators of the CLS Bank were the G20 banks,[33] and CLS currently has over sixty international banks, two of them Swedish, as shareholders. By linking the payment and delivery of currencies in a foreign exchange transaction, the credit risk can be eliminated.[34] This is done by settling both sides of the transaction simultaneously, and is known as *Payment versus Payment* (PvP).

The CLS Bank intends to provide PvP settlement for gross transactions in participating currencies through the use of multi-currency accounts in which simultaneous transfers of both currencies are made.[35] These clearing operations will create a possibility to implement payment netting on the foreign exchange market, which can effectively reduce the exposures for settlement risk in trading with those currencies which are included.

The start of the operation is estimated to take place in the third quarter of 2001 with a first wave of participating currencies. These currencies are the euro, the British pound, the US dollar, the Canadian dollar, the Swiss franc, the Japanese yen and the Australian dollar. Discussions regarding the affiliation of a second wave of currencies have been held with Sweden, Norway and Denmark. In the long run, CLS would like as many currencies as possible to participate. Although the Swedish payment system already fulfils the technical requirements to a great extent, the big question is whether an affiliation of the Swedish krona is worth the work and money, when it is not unlikely that we will join EMU in the future. A period of use of three years has been regarded as a minimum. Any delays could make the affiliation of the Swedish krona rather less attractive.

The CLS Bank has the potential to offer effective risk reduction. If a sufficient number of members uses the CLS Bank, the whole system of correspondent banks and nostro banks will probably change for the currencies participating in CLS. This will mean a fall in income for many banks which now

act as nostro banks. A shift will then take place to prospective settlement members who hope, naturally, to earn money by offering services to user-members and third parties. The more members CLS has, the more attractive membership will become, and this will make the system even more effective in reducing risks.

The more members CLS has, the more attractive membership will become, and this will make the system even more effective in reducing risks.

It is, however, important to remember that not all currencies are affiliated, and not all counterparties. As can be seen from Figure 3.3, at least 56 per cent of the exposures of the major Swedish banks originate from currency pairs which initially will not be possible to settle via CLS. An international estimate is that 30-40 per cent of the trades will go via CLS in the first wave of currencies and shareholders. A large proportion of trades will, therefore, continue to take place outside CLS. Settlement risks of the foreign exchange trade will, consequently, remain, and it is essential that banks, supervisory authorities and central banks continue to work towards reducing such risks. Furthermore, we have yet to see CLS start up and operate in accordance with the plans.

Is there a need for better regulation of large exposures?

THE CURRENT REGULATIONS FOR LARGE EXPOSURES, AND THEIR DEFICIENCIES

The regulations governing large exposures are contained in the Act on the Capital Adequacy and Large Exposures of Credit Institutions and Securities Companies (SFS 1994:2004) and in the Swedish Financial Supervisory Authority's regulations FFFS 1998:30.

In the Riksbank's view, the regulations on large exposures have certain deficiencies.

In brief, the current regulations mean that a bank must not have credits or other similar exposures towards an individual customer, or a group of customers with mutual links, which are greater than 25 per cent of the bank's capital base. All exposures above 10 per cent of the capital base are regarded as large exposures. In total, the bank's large exposures must not amount to more than 800 per cent of the capital base. The regulations on large exposures follow from EC directives introduced at the beginning of the 1990s. They cover not only banks, but also other credit institutions and securities companies. The aim of the regulations is to ensure that an institution shall not be faced with serious problems solely as the result of the failure of a single counterparty, and that institutions' portfolios achieve a certain amount of diversification.

In the Riksbank's view, the regulations have certain deficiencies. The maximum permitted size for an individual exposure, 25 per cent of the capital base, is not, in the Riksbank's view, unreasonable. The deficiency in the current regulations to which the Riksbank wants to bring attention is, rather, that the majority of short-term exposures which the banks have in the form of counterparty and settlement risks are not regarded as exposures under the present regulatory framework. There are two different exceptions.

The first exception is given in the Act on the Capital Adequacy and Large Exposures of Credit Institutions and Securities Companies, and is that exposures shorter than 48 hours which arise in connection with the normal settlement of foreign exchange transactions are not included. The Riksbank regards these risks as being in the same category as uncollateralised credit exposures. These exposures tend to be large, particularly between financial companies. The exposures period is, in

32 "Settlement Risk in Foreign Exchange Transactions", BIS, March 1996.

33 Major international banks.

34 There is a risk that a bank delivers the sold currency, but then does not receive the currency it bought. The bank's exposure to the counterparty lasts during this time gap (from the point at which a payment instruction is irrevocable, until the confirmation of payment) and for the full value of the amount, "the full credit risk".

35 Multi-currency account: Account with subsidiary accounts in all participating currencies.

itself, short, around two days, but this is not very different from the overnight loan market or other types of credit with short maturities or the option of rapid termination. Nor do these exposures require capital cover.

The second exception can be seen in Finansinspektionen's, the Swedish financial supervisory authority's, regulations on large exposures. Under these regulations, exposures towards other financial institutions need not to be included in full in calculating an institution's large exposures. The exposures may be reduced to a greater or lesser extent depending on maturity.[36] The majority of exposures arising between financial companies can be assumed to have a short maturity, and the shortest exposures need not be included at all. The exception rule means that there is, therefore, no limit to how large an institution's exposures towards other financial institutions may be, as long as the maturities are, on the whole, short.

REASONS FOR TIGHTENING THE LIMITS FOR LARGE EXPOSURES

The account at the beginning of this chapter shows that the banks' exposures towards counterparty and settlement risks are considerable. It can be assumed that on certain occasions they could amount to a sum for individual banks that can be so large that the failure of the largest counterparty would seriously threaten the financial position of the bank.

It seems unreasonable to exclude exposures towards financial companies from the regulatory framework. These should be seen as being particularly important to include.

The fact that exposures between financial companies are not covered by the regulations on account of one of the two above-mentioned exceptions involves a particular problem in that it is precisely these exposures which give rise to systemic risk. The term "systemic risk" usually refers to financial problems at a bank or other financial company spreading to other companies within the sector. This is one of the most important reasons for the existence of special regulations and supervision for financial companies. Based on this line of reasoning, it seems unreasonable to exclude exposures towards financial companies from the regulatory framework. These should be seen as being particularly important to include.

The Swedish banking system is very highly concentrated, given that the four major banks have market shares amounting to 80-90 per cent in most market segments for banking products. This concentration means that exposures among the major banks are naturally large, and accordingly the risk of financial problems spreading among them is also large. The problem is aggravated by the fact that it is not unlikely that all the Swedish banks would be affected to some extent if one bank were to make substantial losses in its credit portfolio or in another operation.

A further problem is related to the size of the banks in the financial system. "Too big to fail" means that there is a perception that certain banks are so important to their national financial systems that the authorities could not permit these banks to fail, since there would then be a risk that the whole national financial system would collapse. A bank which is generally regarded as "too big to fail" enjoys advantages from this. The bank can obtain lower financing costs through a reduction in the credit risk to financiers if it is probable that the bank would be rescued in the event of problems occurring.[37] There is, consequently, an incentive for a bank to try to be regarded as "too big to fail". Close links with other important banks in a financial system can strengthen the probability of being regarded as "too big to fail". It is thus not certain that the incentive to reduce exposures among "system-critical" banks is as strong.

CONCLUSIONS

In the Riksbank's opinion, exposures to settlement risk in foreign exchange trade should, in principle, be covered by the regulations on large exposures. The foreign exchange market, however, is in every respect an international market, where trades take place between companies all over the world. Trading normally takes place in large volumes, and it can

become necessary to take large positions towards individual counterparties. Restrictions which unilaterally affect Swedish institutions risk limiting Swedish companies' ability to be attractive counterparties in this market. There are, therefore, good reasons to await international regulatory developments in this area. Regarding the foreign exchange markets, the international authority community, CPSS, has also given the sector some respite to attempt to deal with the problem internally, through improved settlement procedures.[38] The CLS Bank is the result of the sector's efforts in this direction. The Riksbank intends to work internationally to have settlement exposures subject to the regulations on large exposures in international agreements. It is equally important to have these exposures governed by the capital adequacy regulations. The regulations on capital adequacy are important in that they provide an incentive for the banks to reduce all settlement exposures, while the regulations on large exposures are only a constraint to reduce specific large individual exposures.

The Riksbank intends to discuss the possibility of a change in the regulations with Finansinspektionen and the Ministry of Finance.

Regarding a possible change in the exceptions which apply to exposures between financial companies, the Riksbank considers that such a change would not risk limiting competition in the same way as a change in the exception for settlement exposures would. The exposures which are particularly large in the Swedish banks are holdings of securities, especially mortgage securities. The fact that Swedish banks hold large volumes of their own and other mortgage institutions' securities is probably a relatively unique Swedish phenomenon, which has no equivalent in other countries. Foreign competition in this market is hardly of such a nature that the competitiveness of the Swedish banks would be restricted by a limit on Swedish banks' exposure to individual mortgage institution arising from investments in their securities. It is the Riksbank's judgement that the exception could be completely abolished, and that exposures between financial companies ought to be fully included when estimating large exposures, irrespective of the maturities of the exposures. The Riksbank intends to discuss the possibility of such a change in the regulations with Finansinspektionen and the Ministry of Finance.

36 If the maturity is less than one year, it is not included at all, if it is between one and three years it is included at 20 per cent of the exposure, and if more than three years it is included at 50 per cent. Under an alternative reduction method, all exposures to financial institutions are included at 20 per cent, irrespective of maturity.

37 There is a special rating for this probability, provided by one of the big three ratings institutes, Fitch IBCA. On this rating, all the Swedish major banks are rated 2 on a scale of 1 to 5, which means that a bank, in IBCA's judgement, will receive support from the state if it becomes necessary. Rating class 1 means that there is a legal guarantee from the state, class 3 means that shareholder support will be forthcoming from owners who have substantial resources and a good reputation, class 4 means that support is probable but not certain, and class 5 means that support is possible, but by no means certain.

38 CPSS: Committee on Payment and Settlement Systems.

CHAPTER 4

Which measures can be taken in the event of a significant build-up of risk in the banks?

In the Financial Stability Report, the Riksbank presents its view of the state of the financial sector. If signs of a significant build-up of risk are observed, the Riksbank will first communicate its view publicly and directly to the banks, a technique known as moral suasion. If the situation is judged to be more acute, there are other measures which can be taken.

One of the Riksbank's objectives is to promote stability in the financial system. A significant build-up of risks in the banking sector through the channels presented in chapter two of this report would constitute a potential threat to this objective. This chapter deals with the possible measures to be taken if an excessive build-up of risks is detected.

The Riksbank does not have the sole responsibility for financial stability. This responsibility and authority is spread between the Swedish Parliament, the government, Finansinspektionen, and the Riksbank. Several of the measures which may be contemplated to counteract a build-up of risk also lie within the areas of competence of these institutions.

The threat to financial stability is not the only reason for counteracting macroeconomic imbalances in the form of rising asset prices, for instance, and a rapid credit expansion. Another reason is that they may lead to an increased inflationary pressure and an accompanying need to adapt monetary policy. This is a normal situation for monetary policy, which results in the raising of the repo rate. A further reason is that the imbalances could lead to fluctuations in production and employment, even when price stability is not threatened. This is a problem that has historically been fairly uncommon, but which may require further analysis and consideration. These other motives for the government to counteract any imbalances are not discussed in this context.

Measures aimed at maintaining financial stability can be divided into measures for the prevention of crises and measures for crisis management. The former category, crisis prevention, includes regulation of the financial sector with laws and regulations, the supervision of financial institutions by Finansinspektionen and the Riksbank's oversight of the financial system. The latter area, crisis management, involves measures which Finansinspektionen may use for the management of institutions experiencing problems and the Riksbank's prerogative to act as

lender of last resort. The measures generally focus on dealing with the situation in individual institutions and on limiting the domino effects which can result in the event of a collapse of an individual institution. Economic policy instruments to counteract, for example, general overheating in the economy also normally reduce the build-up of risk in the financial sector. However, there are few examples where such measures have been used with the sole aim of removing threats to financial stability.

Imbalances in banks' risk-taking when granting credit in relation to macroeconomic tendencies can build up in connection with rapid credit growth, or dramatic increases in asset prices. What is more likely, however, is a combination of both of these factors. When pricing risks, market players cannot be expected to take into account the risk of the entire financial system breaking down as a result of these imbalances and the loss in wellfare which would be associated with such a collapse. An external effect thereby exists which can warrant government intervention. The external effect is that the banks can normally be expected to charge a lower risk premium when granting credit than that which would be justified if they were to take into account the cost of a collapse of the entire financial system. This external effect often creates expectations that the government will provide the necessary safety net in the event of a financial crisis. Market players will therefore be more willing to accumulate risk, since they consider it possible that the government will save the banks if the problems become too great ("moral hazard"). A related problem for the authorities is that when a crisis has accured, those active in the markets are unwilling to accept new risks. As a result of this, the supply of credit dries up and economic growth is thereby stunted.

Even if, against this background, a difference may exist between the views of the authorities and those of the market with regard to the risk of imbalances linked to macroeconomic tendencies, it will always be difficult for the authorities to prove that a certain development will lead to imbalances where the level of risk is too high. It is likely that a financial crisis will always appear to be relatively improbable. Since most of the measures discussed in this section are linked to some form of cost, authorities must have good reasons for such a view.

MORAL SUASION

At an early stage, the Riksbank can influence the prevailing development by bringing attention to and discussing the state of the financial sector publicly and in the form of a dialogue with the banks. One way in which this takes place is in connection with the production of the Financial Stability Report, in which the Riksbank presents its understanding of how threats to the financial system can be identified and how they should subsequently be dealt with by players in the market. It is a matter of informal application of pressure or the result of an persuasive argumentation, moral suasion, rather than employing enforcible means.

At an early stage, the Riksbank can influence the prevailing development by bringing attention to and discussing the state of the financial sector publicly and in the form of a dialogue with the banks.

Moral suasion can for instance be used to influence the granting of credit. If the banks concur with the Riksbank's assessment that growth in lending involves excessively risky positions, they may choose to change their credit policies and respond more restrictively to credit enquiries. Another course of action is to reduce loan to value ratios which limit lending against collateral in the form of shares and property. The advantage of such measures is that they are very efficient in that they can be focused specifically on those areas perceived as involving the greatest degree of risk.

Moral suasion is justified since the Riksbank takes an interest in the systemic effect of the behaviour of the entire banking sector. The Riksbanks perspective differs from that of the individual banks, which focus on evaluating trends in their own portfolios. In a highly competitive lending market, it is likely that banks will attach more importance to short-term profitability, growth and increasing their

market shares than on the long-term risks involved in granting credit. The high returns demanded by the stock market contributes to this in no small measure. It can prove particularly problematic to assess long-term macroeconomic trends and possible effects on loan losses if these are significantly worse than anticipated. Since the banks do not take the risk of systemic crises into account, they do not have the same incentives as the authorities for taking into consideration the effects of macroeconomic scenarios which would have catastrophic consequences, even though the likelihood of their materialising is remote.

The Riksbank can, in certain situations, provide a more comprehensive picture of the risks than individual players can.

In this context, the Riksbank can, in certain situations, provide a more comprehensive picture of the risks than individual players can. In turn, the banks can be influenced by the Riksbank's argumentation if they consider it to be credible, since it is in their own interests to reduce the risk of future losses. Given this, the Riksbank can undertake a catalysing function. The Riksbank's assessment can also affect other market players which monitor the banks, such as credit issuers, rating institutes and shareholders which, in turn, can apply pressure on the banks to lower their risks. In these cases it is crucial that the assessment be made public, this is one of the reasons behind the Riksbank's decision to publish the Financial Stability Reports.

The Riksbank's assessment may differ from the market's for the additional reason that the Riksbank may sometimes have access to information which is not available to the banks. An example of this is when the Riksbank gains access to rapidly-supplied, reliable information relating to international financial crises, for example from the IMF or through central bank networks. A further example is statistics and other information which the Riksbank and Finansinspektionen gather from the financial sector. Only a limited amount of this can be accessed by the market.

If it is judged that moral suasion is not leading to a correction of the imbalances detected through analyses and supervisory activities, more direct intervention aimed at influencing the course of events may be considered justifiable. This is not entirely free of complications, however, since measures diverging too sharply from international praxis may entail that the affected businesses leave Sweden or are taken over by foreign competitors which, through regulations on home country supervision, are not subject to the same requirements. Norway, for example, chose about two years ago to raise capital adequacy for housing loans, with the aim of moderating the demand for credit and improving the solvency of the Norwegian banks. It was decided to leave the capital requirement for high-risk corporate lending unchanged, since corporate lending was exposed to considerable competition from other Nordic banks.

Part of the process which can lead to informal discussions with the banks may involve the Riksbank or Finansinspektionen examining more closely a particular aspect of the banks' operations which is significant to the build-up of risk. An example of this is the special examination of the banks lending to the household sector which Finansinspektionen recently announced. Another is the Riksbank's measurements of exposure to counterparty and settlement risk in the banks, which are undertaken in order to assess the risk of contagion effects in the financial system if a bank collapses (see also Chapter 3). Collecting information in this way functions as a means of improving the basis for the authorities' analysis and as a signal to the market that the authorities attach particular weight to a specific area.

More far-reaching measures, to the extent that they are considered appropriate, can be divided into two categories:

- Changes in structural regulation
- Quantitative regulations

The traditional preventive measures should ideally be so effective that they preclude the need for extraordinary measures such as increased required capital ratios and quantitative regulation following macro-

economic disturbances. The large number of banking crises which are caused by macroeconomic changes, however, are proof that this has not been the case.

CHANGES IN STRUCTURAL REGULATION

There may also be opportunities in the existing regulatory structure to improve incentives for the banks to manage the type of imbalances discussed here, measures which are natural given the current approach to preventive regulations within the government agency sphere. Measures of this kind are intended to structurally improve the functioning of the financial system and this will improve market players' ability to take macroeconomic changes into account. In contrast to other measures, it is therefore not a matter of acting to counteract imbalances. The measures are consequently not dependent on an assessment of whether there are in fact imbalances which threaten financial stability. It can be noted in this context that the Riksbank occupies a special position in Swedish public administration in that the Riksbank can present bills directly to the Parliament.

The opportunity to allocate the risk premium included in lending rates to a reserve would be an example of such changes.

The opportunity to allocate the risk premium included in lending rates to a reserve would be an example of such changes. Unlike insurance companies, for example, the banks are not permitted to allocate risk premiums to a reserve for accounting and tax purposes-reserves which can subsequently be used when loan losses arise. This is the case in spite of the fact that the banks are not permitted to even out loan losses over time in the same way an insurance company can. When there is a marked upturn in the economy, banks report profits which are higher than the actual risk-adjusted financial result, since the risk premiums for anticipated loan losses are included in the profit. This profit-which in some senses is artificial-is taxed and the shareholders normally expect a portion of it to be paid to them in the form of a dividend. Consequently, the premium for *anticipated* losses no longer remains in its entirety as a reserve in the bank when there is an economic downturn and losses arise. The losses must instead be offset directly against shareholders' equity, which is actually intended to act as a buffer for *unexpected* loan losses.

A further positive effect of allocating risk premiums to reserves is that the banks must specify the size of the risk premiums. This would hopefully entail a clearer pricing of risk in the banks, which would therefore facilitate the observation by the authorities of major changes in risk pricing. This type of provisioning is allowed in other countries, but for various reasons, including tax consequences, has not been allowed in Sweden.

QUANTITATIVE REGULATION

Raised required capital adequacy ratios

A fundamental idea in the work on reforming capital adequacy requirements within the framework of the Basle Committee and the EU is that the capital adequacy requirement should be raised for individual institutions whose risk management does not meet minimum quality standards or otherwise take on risks which are too high. On the other hand, there has been no discussion of the possibilities for generally increasing the capital adequacy requirement in the event of macroeconomic imbalances that threaten financial stability. A general increase in the capital adequacy requirement in this way in Sweden would not be possible without a change in legislation.

A raised capital adequacy requirement means that banks must finance their lending with a greater share of shareholders equity and thus that bank loans should become more expensive—equity being a more costly form of financing than borrowed capital. The increased cost of financing would normally cause the banks to raise their lending rates to compensate for this cost increase. Raising capital adequacy therefore functions in a similar way to an interest rate increase. One advantage is that an increase in the capital requirement could be focused

exclusively on those lending segments assessed as having unreasonable growth, in order to moderate demand in these particular segments. A further favourable consequence of such an increase in the capital requirement is that the capital is built up when economic conditions are good so that the buffer against losses in less prosperous periods increases. On the other hand, the effects are more uncertain if international competition makes it difficult to raise lending rates. In this case, the only effect may be lower banking profits.

Currency and credit controls

One possibility, theoretically at least, is to return to the regulated credit market which Sweden had prior to deregulation in the mid-1980s. The legislation is still in place, but it can only be made effective in the event of extraordinary circumstances. This kind of regulation allows authorities to directly control the volume of credit granting through a credit ceiling, for example. The problem with regulation is that the market normally finds ways of evading it. Given today's internationalised, high-technology financial markets, it would in all likelihood be even easier to create opportunities for circumvention now than it was during the 1970s and 1980s, by offering credit from abroad via the internet.

Other quantitative regulations

Another example of quantitative regulation could be that authorities could determine a maximum loan to value ratio for different assets. This is currently decided by each player individually, sometimes according to certain industry recommendations. A further example is the legal right of the Riksbank to stipulate a reserve requirement.

CAN THE REPO RATE BE UTILISED?

The repo rate is the instrument used by the Riksbank to attain the price stability goal. A rate increase also has an effect on asset prices and the demand for credit. It is normally assumed that monetary policy contributes to a balanced macroeconomic development and thus also promotes financial stability.

Should a situation occur in which financial stability is threatened without any immediate sign of rising inflation, the issue arises of whether to raise the repo rate in order to ensure financial stability. The uncertainty that always arises with regard to predicting financial crises makes it difficult to handle situations of this type. The Riksbank would have to judge the probability of a future financial crisis to be significant, in order to consider using the interest rate instrument. Moreover, the Riksbank must be convinced that an increase in the interest rate would effectively contribute to averting the threat of a crisis.

Should a financial crisis actually occur, the situation would be quite different. A lowering of the repo rate would be justified on the basis of monetary policy consideration and this would also have a stabilising effect on the financial system.

SUMMARY

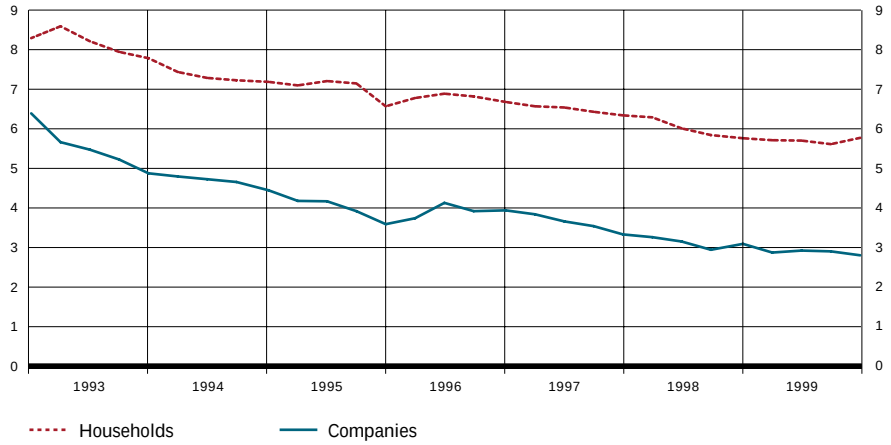
A number of measures could be taken to counteract the build-up of macroeconomic imbalances that threaten the stability of the financial system. These are summarised in the table below in which the measures are ranked according to the likelihood that authorities would use them.

Table 4:1
Measures to counteract stability-threatening macro-economic imbalances

Type of measure	Example	Responsible authority
"Moral suasion"	Discuss risk scenarios in the Financial Stability Report	The Riksbank/ Finansinspektionen
Enhanced measures for information/gathering supervision	Subject banks' credit granting-activities to particular scrutiny	The Riksbank/ Finansinspektionen
Changing the regulatory framework	Provide opportunities for the banks to allocate risk premiums to a reserve	Finansinspektionen/ The Parliament
Raising the required capital ratio		Finansinspektionen/ The Parliament
Raising the repo rate		The Riksbank
Other quantitative regulations	Regulate pledge levels for shares or housing or introduce a reserve requirement	Finansinspektionen/ The Parliament/ The Riksbank

Indicators

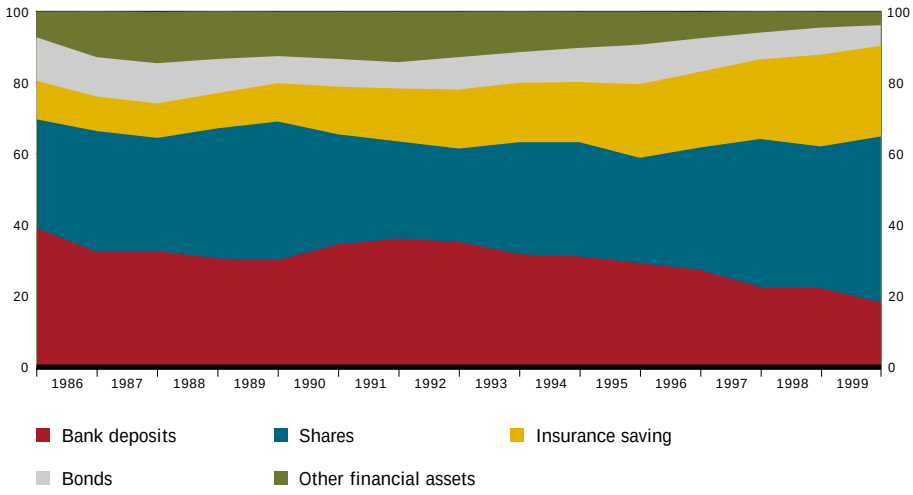
Figure 1.
The difference between the banks' lending and deposit rates for households and companies.
Percentage points



Source: The Riksbank.

The difference between deposit and lending rates provides a good picture of price development in the banks' core activities and is a good indicator of the competitive pressure in the industry. Since the beginning of 1993, margins have gradually deteriorated, although a certain degree of stabilisation was noted in 1999.

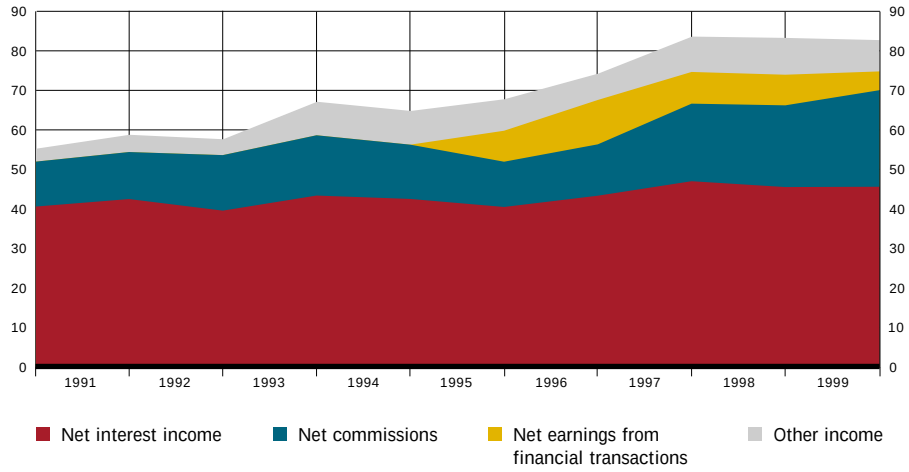
Figure 2.
Household financial assets.
Percentage breakdown



Source: Statistics Sweden.

Bank deposits as a share of household financial assets continue to decrease, and currently amount to less than 20 per cent. In 1999, the exceptional rise in share prices naturally contributed towards enhancing this trend. In the longer term, however, this development also reflects the fact that more and more households are opting to invest in shares and mutual funds instead of depositing their savings in bank accounts.

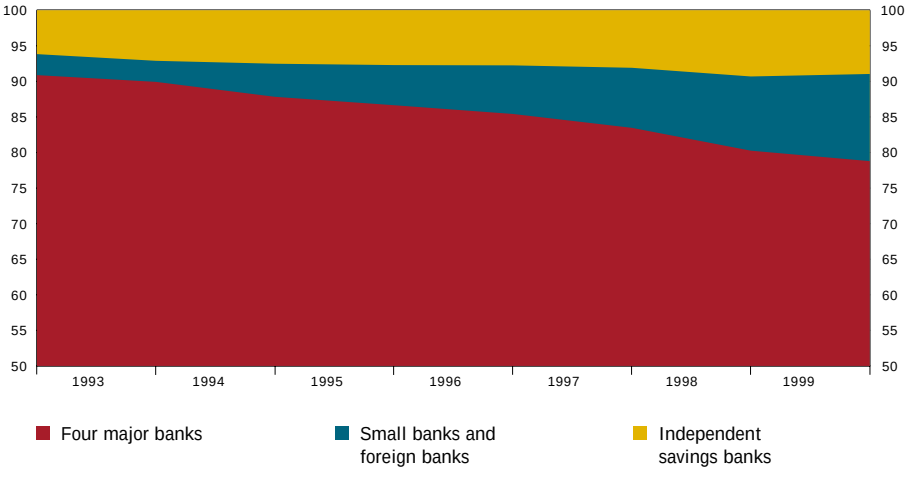
Figure 3.
Income for the major bank groups.
SEK billion



Source: The banks' annual reports.

Net interest income as a share of bank income has fallen since 1991 from slightly over 70 per cent to just over 50 per cent. Instead, net commission income, which includes income from fund management and stockbroking, has increased in importance, and now accounts for around 30 per cent of income. This increase has meant that the banks' earnings have become more dependent on the developments on the stock exchange.

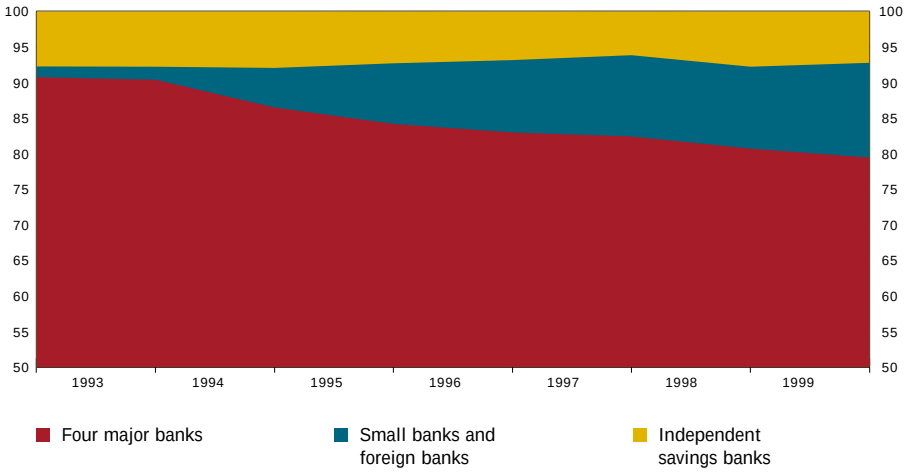
Figure 4.
Lending to companies and households.
Market shares in per cent



Source: The Riksbank.

The major banks continued to lose market shares in 1999, primarily to small and foreign banks. The major banks' share of lending now amounts to slightly lower than 80 per cent, which is 10 percentage points less than at the end of 1993. This development indicates that the entrance barriers to the banking sector have been lowered and that competition has increased in consequence.

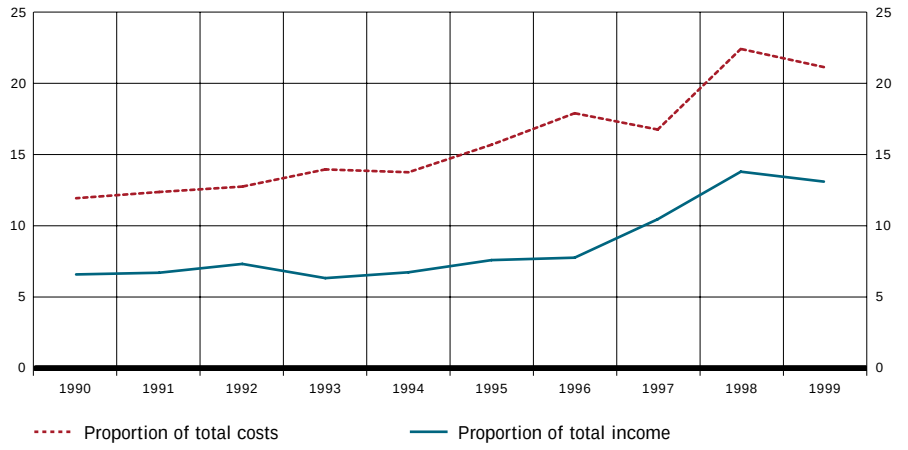
Figure 5.
Deposits from the general public.
Market shares in per cent



Source: The Riksbank.

Deposits from the general public show a development similar to that for lending, with diminishing market shares for the major banks, primarily in favour of small and foreign banks.

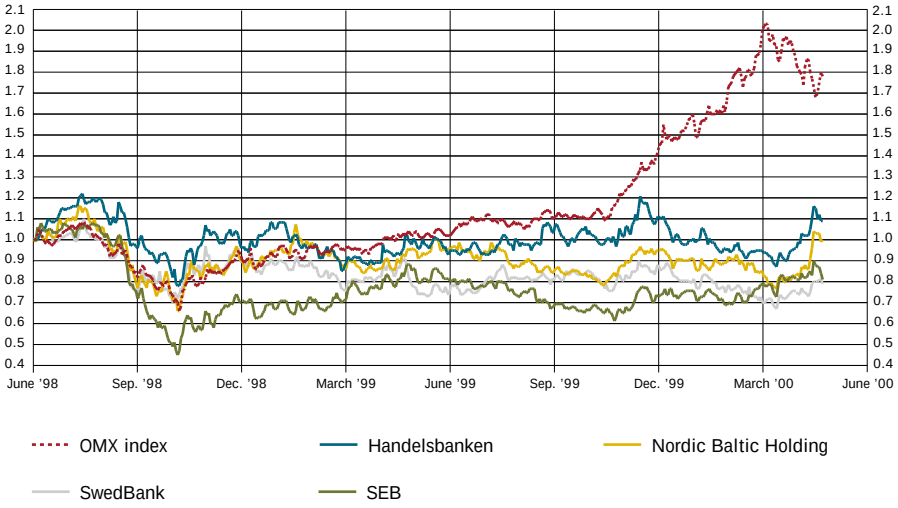
Figure 6.
The bank groups' IT costs, proportion of total costs and total income.
Per cent



Note: Figures for 1990-1996 are based on three bank groups and figures for 1997-1999 based on four bank groups.
Source: The Riksbank.

Although IT investments can lead to future efficiency gains, they also entail a rise in costs in the short-term. Over the past few years, IT costs have become an increasing item in the banks' income statements, and now account for more than 20 per cent of total costs.

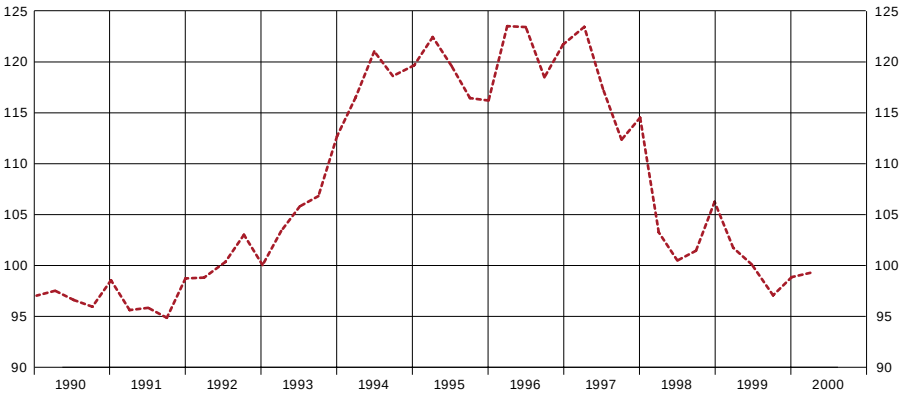
Figure 7.
Bank shares and the OMX index.
Index: 3 June 1998 = 1



Note. Nordic Baltic Holding is the parent company of MeritaNordbanken.
Source: Ecowin.

In contrast to other large segments of the stock market, bank shares developed weakly during 1999. This is probably due partly to the fact that bank shares, as a part of the "old economy", have been obscured by other more rapidly growing parts of the economy, and partly that investors have been sceptical of the banks' ability to reduce their costs.

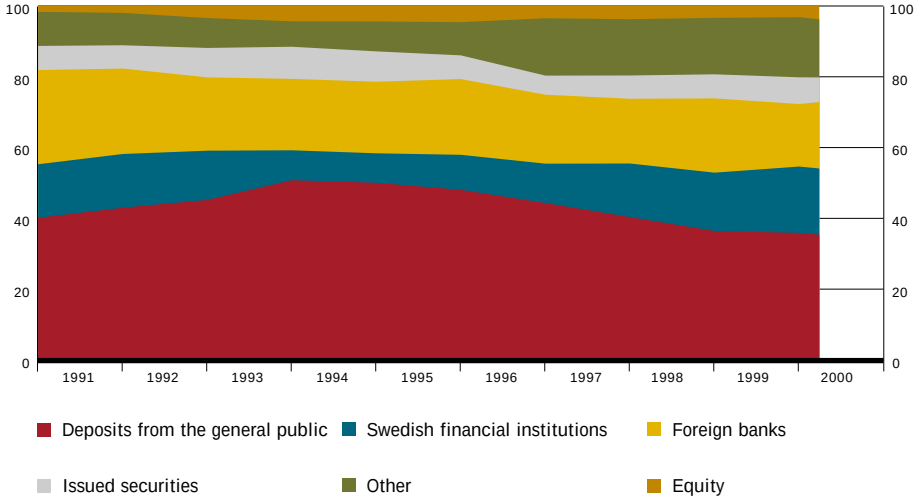
Figure 8.
The banks' deposits as a share of lending.
Per cent



Source: The Riksbank.

The positive state of the economy has meant a considerable increase in lending and a reduction in household saving. Moreover, an increasing number of households are transferring their saving to shares and mutual funds, which has meant that deposits have tended to decline in relation to lending. One consequence of the reduced household deposits is that the banks depend increasingly on expensive and transitory forms of financing and thereby their refinancing risk also increase.

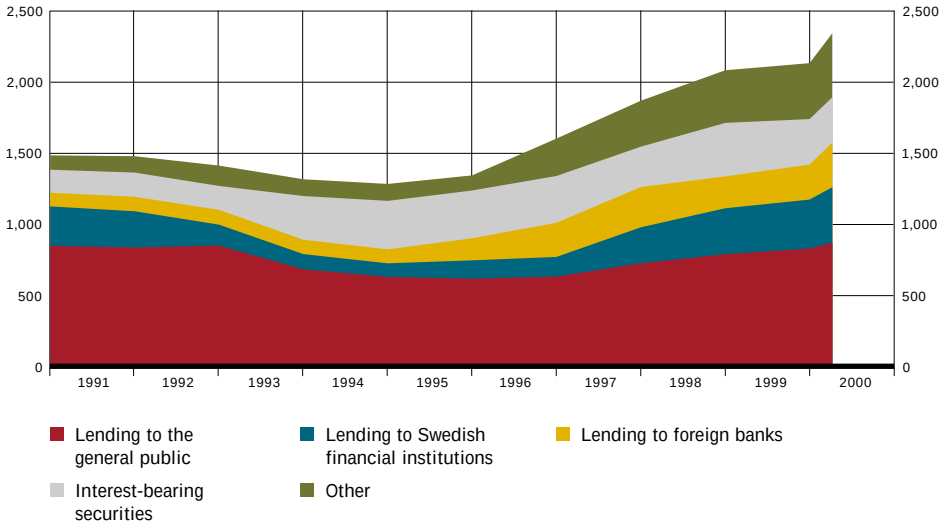
Figure 9.
The major banks' liabilities.
Percentage breakdown



Source: The Riksbank.

The transition to new forms of savings and increased competition has meant that the proportion of the major banks' financing represented by deposits has declined slightly since the mid-1990s. Since deposits from the general public are a comparatively stable and cheap source of financing, the reduction could increase the vulnerability to liquidity disturbances in the financial system.

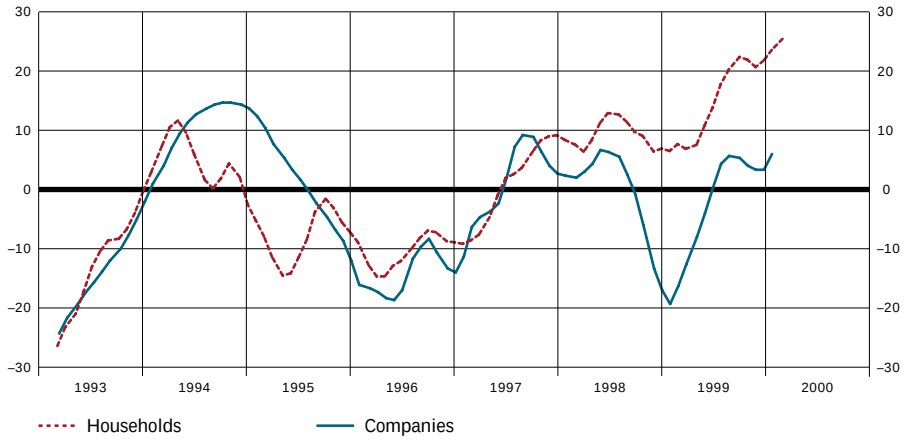
Figure 10.
The major banks' assets.
SEK billion



Source: The Riksbank.

The banks' aggregate balance sheet has expanded during the late 1990s. It should be noted, however, that lending to households and companies has only increased moderately. Instead it is primarily securities and lending to other financial companies that have increased. This type of asset entails increased exposure to counterparty and settlement risks

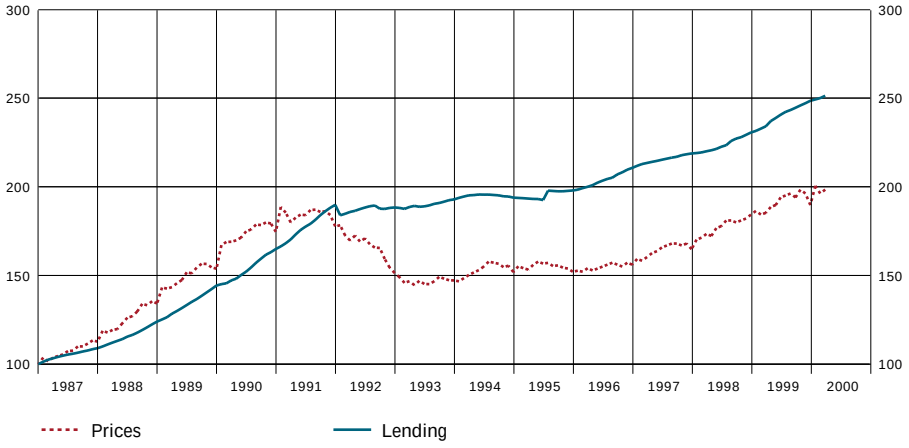
Figure 11.
Confidence indicators.
Net figures



Sources: National Institute of Economic Research and Statistics Sweden.

The confidence indicators show the expectations of households and companies about the future (see glossary for a further explanation). The favourable economic situation has entailed that these figures are currently very high. A bright outlook may entail a greater willingness to consume/invest.

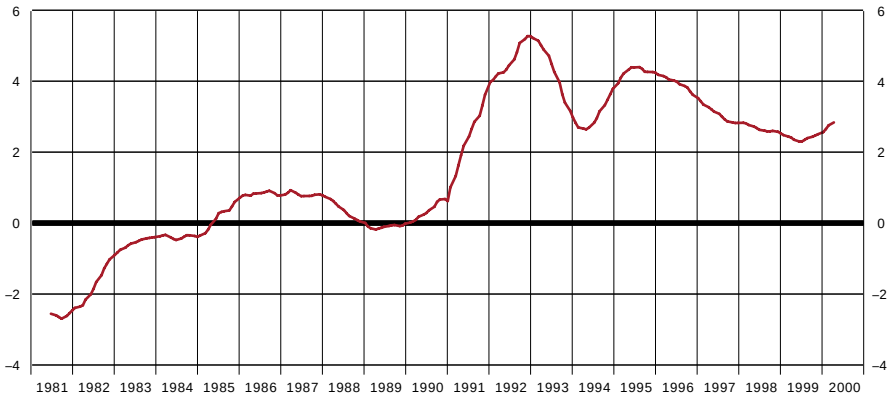
Figure 12.
The trend in prices of single family dwellings and lending for single family dwellings by mortgage institutions.
Index 1986=100



Sources: Statistics Sweden and the Riksbank.

The prices of single family dwellings increased by 7 per cent during 1999 and are currently above the levels that prevailed in the early 1990s. Lending for single family dwellings is currently at a historically high level.

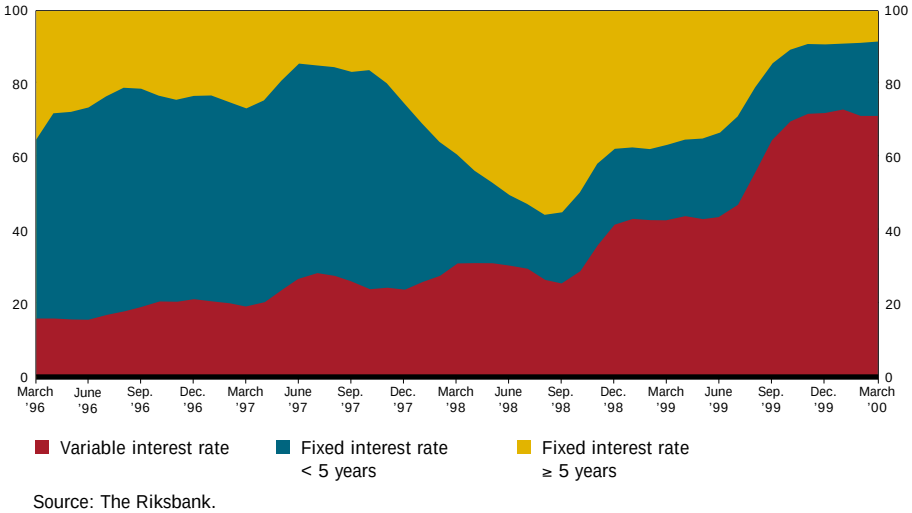
Figure 13.
Mortgage rate adjusted for taxes and inflation.
12-month moving average, per cent



Note. Real interest after tax is calculated as the difference between the nominal interest rate after tax and the household inflation expectations (i.e. interest on a 5-year mortgage after tax minus Statistics Sweden's 1-year inflation expectations from 1981-1990 and Aragon's five-year inflation expectations from 1991-1999).
Source: The Riksbank.

Although nominal interest rates are currently low, real interest rates after tax are comparatively high. In the stability perspective, however, it is primarily the nominal interest rates that are interesting, since they determine the actual interest payments that the borrower's income must cover.

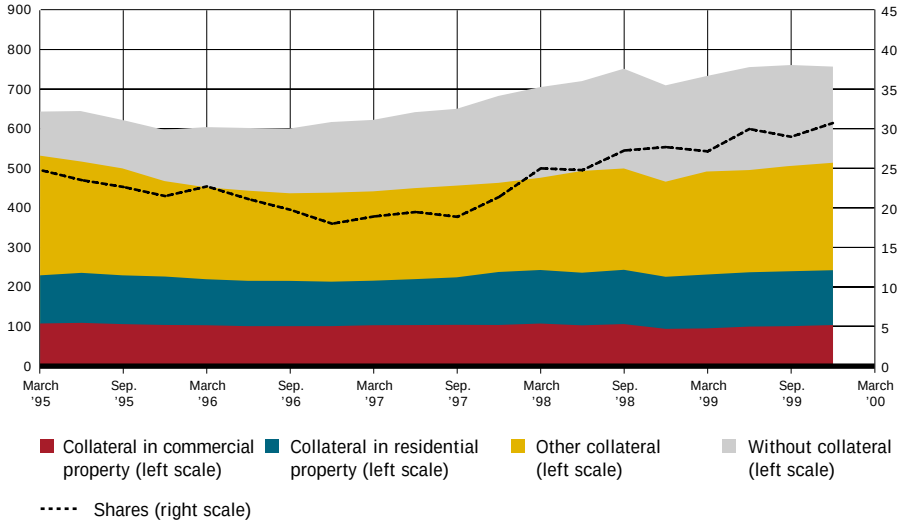
Figure 14.
Household fixed interest periods for new loans from mortgage institutions.
Three-month moving average, percentage distribution



Source: The Riksbank.

Interest rates have gone up since the previous report. Nevertheless, the majority of households prefer to take loans with a variable interest rate. The primary reason for this is the relatively large spread between variable and fixed rates.

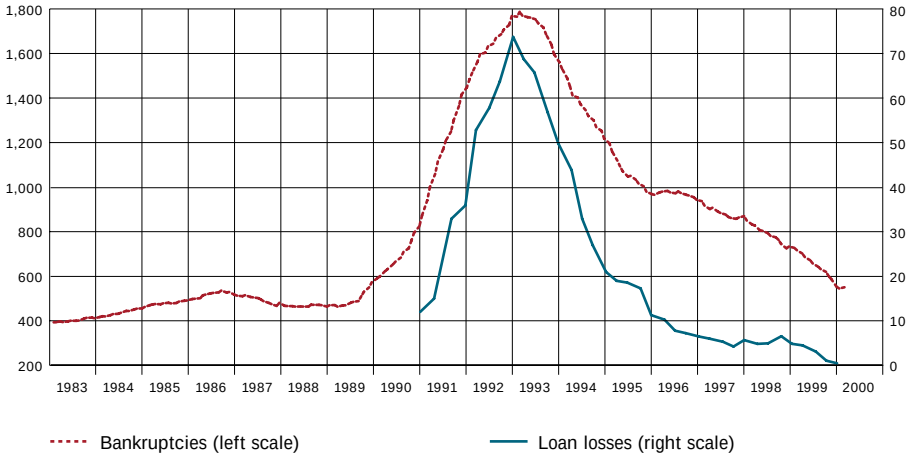
Figure 15.
The banks' collateral.
SEK billion



Note. Lending without collateral denotes unsecured loans and card claims. Other collateral include guarantees, floating charges and shares. Collateral in commercial properties denotes collateral in industrial, farming or commercial premises.
Sources: Finansinspektionen and the Riksbank.

Over the past three years, it is primarily lending without collateral that has increased. Lending with shares as collateral has also increased, although still represents only a small portion of the banks' collateral.

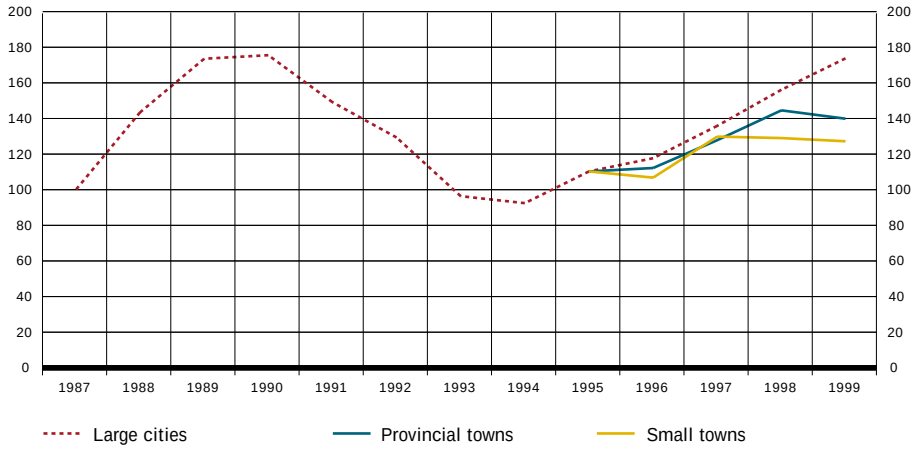
Figure 16.
Loan losses in major bank groups and company bankruptcies.
SEK billion and 12-month moving average



Sources: Statistics Sweden and the Riksbank.

Bankruptcies in the corporate sector have historically been the most common cause of loan losses for Swedish banks. The figure shows the high correlation between the two variables. Following the very high levels at the beginning of the 1990s, both bankruptcies and loan losses have now dropped significantly. The current favourable development in the Swedish economy indicates a low bankruptcy rate also for the next few years.

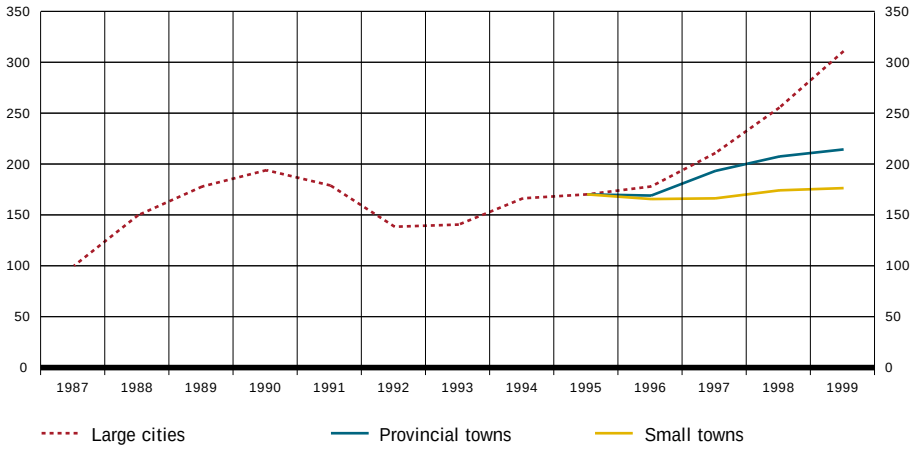
Figure 17.
Prices of commercial properties in large cities, provincial towns and small towns.
Index large cities: 1987=100. Index provincial towns and small towns: 1995=price level for large cities in 1995



Source: Catella Fastighetsinformation.

Since the trough in 1994, prices for commercial properties have risen steadily. From 1995, price development for properties outside the metropolitan areas are also indicated. In 1999, the price increase in provincial towns and small towns began to level out, while prices in the large cities continued rising at an unmitigated speed.

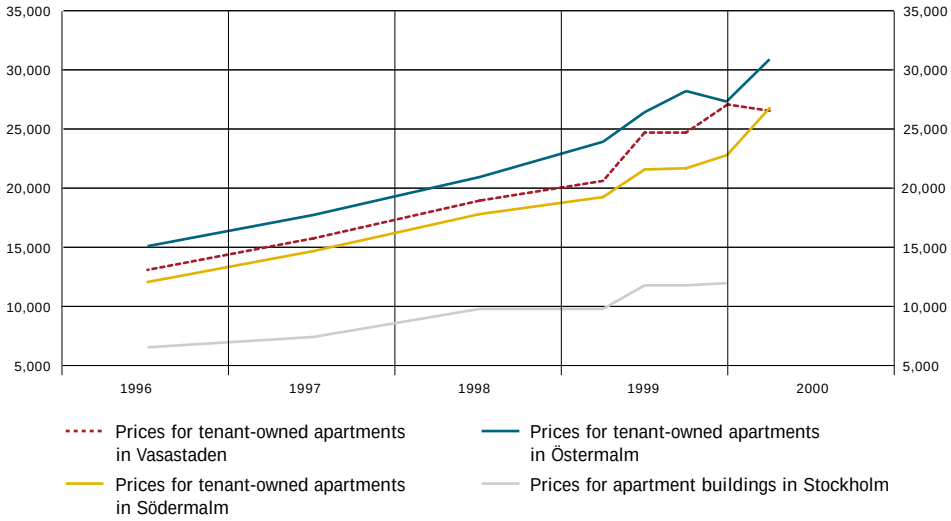
Figure 18.
Prices of apartment buildings in large cities, provincial towns and small towns.
Index large cities: 1987=100. Index provincial towns and small towns: 1995=price level for large cities in 1995



Source: Catella Fastighetsinformation.

In the metropolitan areas, prices for apartment buildings have risen dramatically over the past three years. In the rest of the country, price increases have been considerably more moderate.

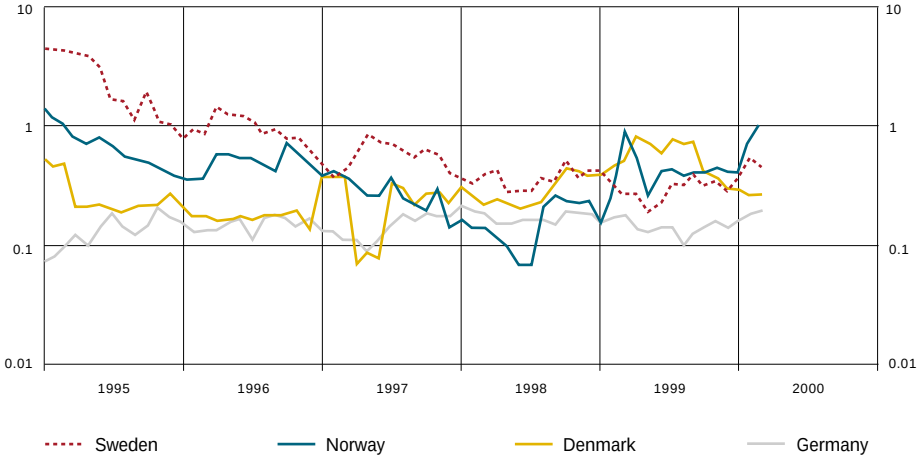
Figure 19.
Prices per square metre for tenant-owned apartments and apartment buildings in inner-Stockholm.
SEK



Sources: Catella Fastighetsinformation and Mäklarsamfundet.

The prices of apartment buildings are largely related to the price development for tenant-owned apartments. The majority of sales of apartment buildings in the Stockholm area over the past few years have taken place in connection with conversion into tenant-owners' associations.

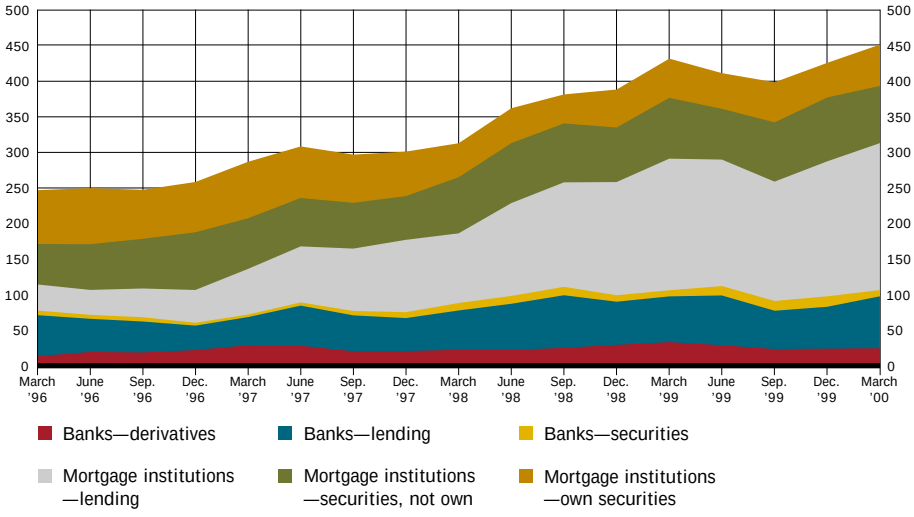
Figure 20.
EDF for listed property companies.
Per cent (logarithmic scale)



Source: KMV Corporation.

One method for forecasting the future financial position of property companies is to calculate an indicator of the likelihood of a bankruptcy. KMV Corporation has calculated such an indicator, based primarily on the development of shares in property companies. According to this model, the current probability of property companies going bankrupt is basically unchanged compared with 1999.

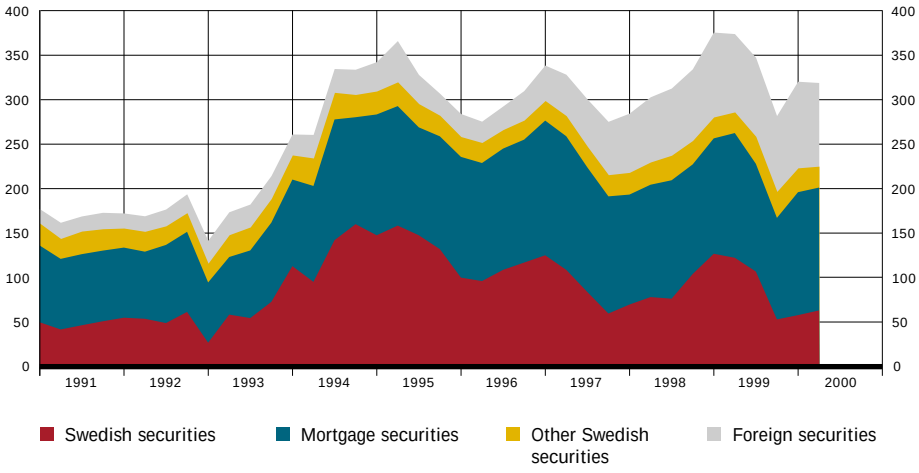
Figure 21.
Exposures of the four major banks to Swedish banks and mortgage institutions. SEK billion



Source: The Riksbank.

Following a sharp increase over the past few years, exposure to Swedish mortgage institutions appears to have stabilised. One explanation for the previous increase was that financing via promissory note borrowing has often been cheaper than issuing bonds, since the banks had a surplus of cheap financing such as deposits. Over the past year, however, a deficit on the deposit side has arisen, thus forcing the mortgage institutions to borrow on the bond market. The major exposures between Swedish banks and mortgage institutions entail a considerable risk of knock-on effects in the Swedish financial system.

Figure 22.
Securities holdings of the four major banks. SEK billion



Source: The Riksbank.

The banks' holdings of securities more than doubled during the period 1993-1994, probably due to a surplus of deposits at the banks and the emerging repo market. Since then, foreign securities holdings have increased the most.

Glossary

Bilateral netting Bilateral netting is when two parties offset their claims and liabilities against each other, thereby reducing the scope of their exposure.

Capital adequacy Capital adequacy, or the capital adequacy ratio, is the capital base in proportion to risk-weighted volume. Capital adequacy shall, according to the Act on the Capital Adequacy and Large Exposures of Credit Institutions and Securities Companies (SFS 1994:2004), be at least 8 per cent.

Capital base The capital base is the total of Tier 1 and Tier 2 capital. Tier 1 capital is equity minus goodwill and 72 per cent of the parent company's untaxed reserves. Tier 2 capital is subordinated debentures with a slight reduction where the remaining maturity is less than five years. In order to calculate the capital base, the sum of Tier 1 and Tier 2 capital is reduced by the book value of holdings in insurance and financial operations exceeding five per cent, which must not be consolidated.

Capital deficiency A person has "capital deficiency" for taxation purposes if the sum of capital costs is in excess of the sum of capital income, that is, if the sum of financial income plus income from renting out a private residence plus capital gains minus capital losses minus the cost of administration (> SEK 1,000) minus financial expenses, is negative.

Confidence Indicator *Firms*: The National Institute of Economic Research performs monthly surveys where the business sector is asked about earnings, the current situation and expectations for important economic variables on which no quantitative data are yet available. The Confidence Indicator is compiled on the basis of several variables (assessment of order books, assessment of stocks of finished goods and production expectations) and attempts to reflect the outlook of firms for the future. Survey replies are reported in net figures, which is the balance between businesses that have stated positive and negative expectations respectively for each variable.

Households: Statistics Sweden performs monthly surveys of the household sector. Answers are reported in net figures, i.e. the percentage that has answered "improving" minus the percentage that has answered "deteriorating" to the questions about the economic situation in Sweden and the household's own economic situation.

Correspondent bank In order to effect a payment in a currency other than one's own domestic currency, a bank commonly uses banks in other countries, correspondent banks. A Swedish bank opens a so-called nostro account with the correspondent bank, from which deposits and payments are made. The correspondent banks participate in their respective national payment systems and forward payments to the final payee. The major banks are thereby part of a network of correspondent banks in many different countries.

Cost/income ratio Total costs in relation to total income, less depreciation according to plan for leased equipment. The cost/income ratio is calculated before and after loan losses, including change in the value of appropriated property.

Debt-equity ratio A company's liabilities in relation to its equity.

Disposable income Income after tax and transfers.

External effect An external effect of the production or consumption of a player is the effect of this on the utility or production of another player.

Foreign exchange settlement Foreign exchange trade is based on selling one currency against payment in

another currency. In this transaction between two currencies there is a time lag. A bank usually sends a payment instruction to its correspondent bank the day before the settlement date. Depending on the agreement that a bank has with its correspondent bank, the payment can then be cancelled up to a certain agreed point in time. On the settlement date, the transfer from seller to buyer takes place for both currencies. Thereafter, the correspondent bank sends a statement to the bank, which can then confirm that the expected payments have been effected. The statement from the correspondent bank usually arrives the day after the settlement date. This means that the time lag between irrevocable payment and confirmed receipt, the bank's exposure period, is around two days.

Foreign exchange settlement risk The risk that one party in a currency transaction pays in an amount corresponding to the purchased currency, but does not consequently receive the purchased currency.

Full credit risk Full credit risk refers to a situation where the bank stands to lose the entire underlying value of a transaction if the counterparty cannot fulfil the obligations as stated in the contract.

GDP Gross domestic product: approximately the total value of the goods and services for end users that are produced for the market and the public sector during a period, usually one year.

Interbank market The interbank market is a market for deposits and lending primarily between banks, although other large companies also participate to some extent. Banks with liquidity surplus can place this as an interbank loan for a certain period with banks that have a liquidity deficit. The interbank market comprises overnight loans by which banks regulate their daily liquidity requirements, but also loans with a maturity of up to two years. Loans in both Swedish and foreign currencies are available on the interbank market. No collateral is required for loans on the deposit market.

Interest coverage ratio The interest coverage ratio is the income before provisions and tax plus financial costs divided by financial expenses. A high interest cover ratio shows that the company's operating surplus adequately covers financial expenses, while a value under 1 shows that the operating surplus is not sufficient to cover financial expenses.

Interest margin The difference between the average interest on all assets and the average interest on all liabilities.

Investment margin Net interest income in relation to average balance sheet total.

Loan loss level Loan losses and changes in the value of appropriated property in relation to the initial balance for lending to the general public, credit institutions (excluding banks) and appropriated property and loan guarantees.

Multilateral netting When a clearing house is used as an intermediary, it is possible for all participants to offset claims and liabilities against each other. Multilateral netting thus entails that each participant has a maximum of one claim from, or one liability to, the other participants or the clearing house.

Net interest income Interest income and leasing income, minus interest expenses and depreciation of leased equipment according to plan.

Nostro account In order to be able to effect a payment in a currency other than one's own domestic currency, a bank commonly uses banks in other countries, correspondent banks. A Swedish bank opens a so-called nostro account. This is similar to a normal current account from which deposits and payments are made. The correspondent banks participate in their respective national payment systems and forward payments to the final payee. The major banks are thereby part of a network of correspondent banks in many different countries.

Payment versus payment, PvP Simultaneous payment and delivery of currency in a foreign exchange transaction.

Problem loans Total of doubtful claims and claims subject to interest reduction.

Ratio of doubtful claims to loans Doubtful claims net in proportion to lending to the general public and credit institutions (excluding banks) and leased equipment.

Return on equity The net income for the period after appropriations and tax, in relation to the average equity adjusted for new issues and dividends, and including minority interests.

Risk-weighted volume The risk-weighted volume is determined by placing assets and items that are off-balance sheet in separate risk categories. The volumes are weighted with regard to estimated risk so that they are included in the risk-weighted volume by 0 per cent, 20 per cent, 50 per cent or 100 per cent.

Terms of trade, ToT A country's terms of trade in foreign trade are the relationship between price levels for the country's exports and imports. Normally, the country's terms of trade improve or deteriorate as exports rise or fall respectively in relation to import prices.

Tier 1 capital ratio Tier 1 capital in relation to the risk-weighted amount. Tier 1 capital is the part of the capital base which comprises equity, including proportion of equity in untaxed reserves, with deduction for goodwill.

Volatility Variability in economic variables such as interest and exchange rates. High volatility means greater variability, and thus, greater uncertainty among market players about how the market is going to develop.