

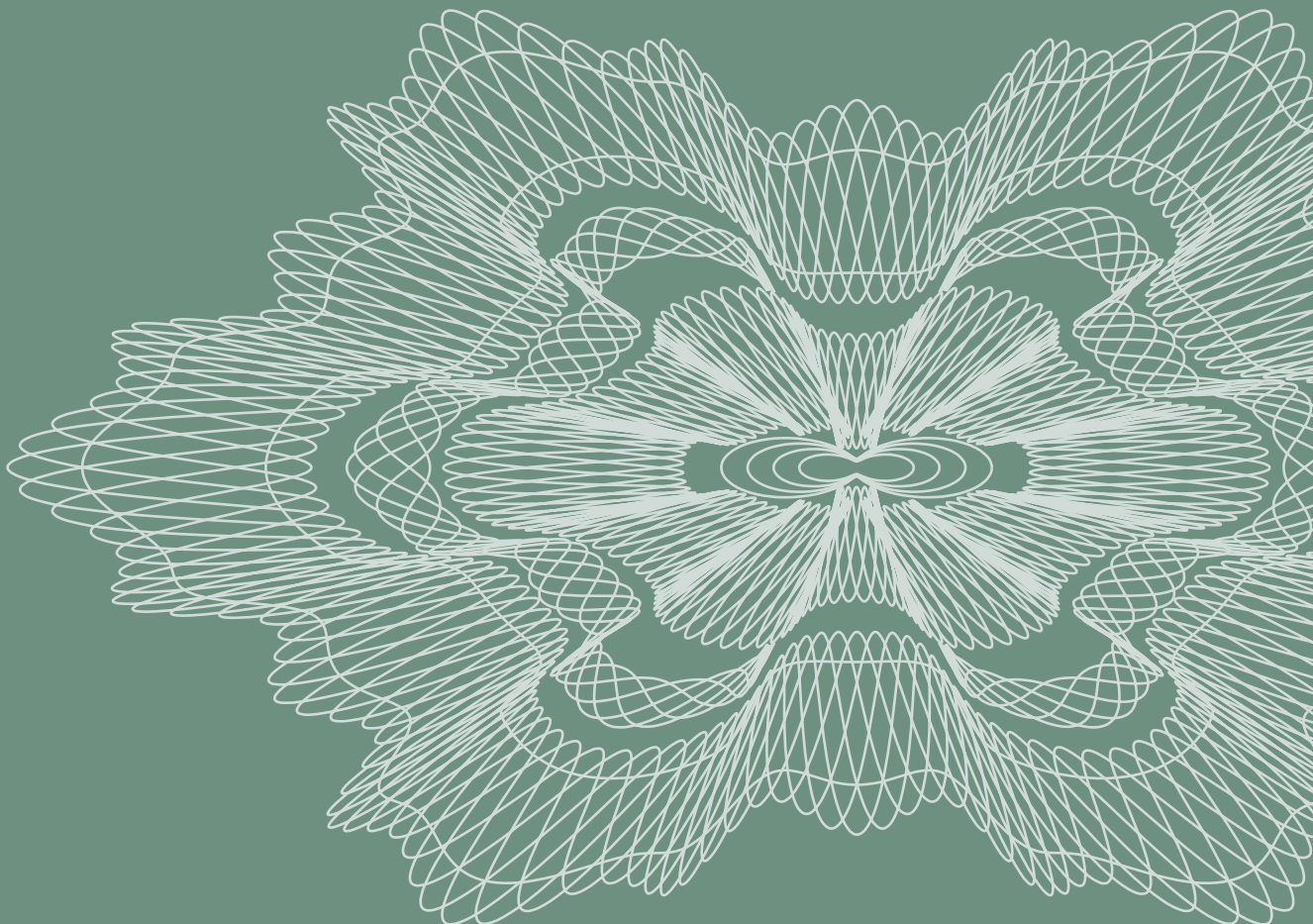
Reports from the Central Bank of Norway
No. 2/2004



Financial Stability

1
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June



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Norges Bank's reports on financial stability

Pursuant to the Norges Bank Act and the Payment Systems Act, **Norges Bank shall contribute to a robust and efficient financial system.** Norges Bank therefore monitors financial institutions, securities markets and payments systems in order to detect any trends that may weaken the stability of the financial system. Should a situation arise in which financial stability is threatened, Norges Bank and other authorities will, if necessary, implement measures to strengthen the financial system.

The *Financial Stability* report contains information gathered by Norges Bank through its monitoring work. The purpose of publishing the report is to highlight factors of importance to financial stability. The report is published twice a year. It forms the basis for a submission from Norges Bank to the Ministry of Finance containing an assessment of the stability of the financial system.

Financial stability means that the financial system is robust to disturbances in the economy and is able to mediate financing, carry out payments and redistribute risk in a satisfactory manner. Experience shows that the foundation for financial instability is laid during periods of strong growth in debt and asset prices. Banks play a central part in extending credit and mediating payments and are therefore important to the stability of the financial system.

The impact of economic disturbances on financial stability depends on:

- developments in debt and asset prices
- the debt-servicing capacity of borrowers
- banks' exposure to different types of risk
- banks' earnings and financial strength, i.e. their ability to deal with losses
- whether problems in one part of the financial system are amplified and/or spread to other parts of the system

This report focuses on these factors. The first two chapters present a discussion of macroeconomic developments in Norway and internationally that are of importance to financial stability. We look in particular at developments in debt, asset prices and the debt-servicing capacity of borrowers. Chapter 3 considers banks' earnings, financial strength, and risks. Credit, liquidity and market risk are discussed in each report. Other types of risk, such as counterparty risk, settlement risk and operational risk, are examined periodically. Developments in other financial institutions are also considered. Many of these institutions are linked to banks through financial conglomerates. Norges Bank's annual *Report on Payment Systems* provides a broader overview of developments in the payment system.

The discussion of the various types of risk culminates in a qualitative assessment of the **degree of risk**. We use the designations low, relatively low, moderate, relatively high and high risk. Changes in the risk situation since the previous report are also evaluated. Our assessments are based on a broad range of information. Our overall assessment of the financial stability outlook takes the different types of risk into account. Because loans account for a large portion of banks' assets, we place considerable emphasis on credit risk (risk of loan losses).

Financial Stability 1/2004

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The cut-off date for this report was 26 May 2004

Growth in household debt remains strong

Global economic growth has picked up. The financial balance sheets of households and enterprises have improved in many countries, and the banking industry has achieved solid results. This has contributed to reducing the vulnerability of the global financial system. However, the trade deficit and central government budget deficit in the US have continued to increase. Financial market participants expect a rise in key rates in many countries in the period ahead. How a rise in interest rates will affect financial markets is uncertain.

In Norway, household debt and assets have both been growing strongly for a number of years, even in periods with a substantially higher interest rate level. This may partly reflect a structural adaptation among households. The transition to flexible inflation targeting has reduced the risk of a sharp rise in both interest rates and unemployment at the same time, and thereby made such an adaptation less risky. There is nevertheless reason to monitor developments in households' debt burden closely in the period ahead. Debt relative to disposable income is approaching the level during the banking crisis. The value of assets is dependent on prices that may fluctuate substantially. Moreover, debt and assets are unevenly distributed among households.

Growth of total credit to municipalities, non-financial enterprises and households has declined, and is now approximately in line with the growth in the Norwegian economy. An important reason for this is that enterprises continue to reduce their debt. Rising capacity utilisation in the economy may be expected to lead to renewed growth in investment, and then enterprises will probably also raise new loans. Corporate profitability improved from 2002 to 2003. The number of bankruptcies has fallen from the peak level in the second quarter of 2003.

The low interest rate level has reduced the interest burden, making it easier for households and enterprises to service debt. However, it is important that long-term investments are not made on the assumption that interest rates will remain low for the duration of the loan.

Bank earnings improved from 2002 to 2003, with a further improvement in the first quarter of 2004. The positive developments are due to increased earnings on securities and lower loan losses and operating expenses. However, banks' net interest income declined somewhat through 2003, primarily as a result of the fall in interest rates. Banks' financial strength is satisfactory, and their risk management has been substantially strengthened since the banking crisis.

On balance, the short-term outlook for financial stability is regarded as satisfactory and somewhat better than six months ago. However, the sharp rise in debt has made households more vulnerable to economic disturbances. This represents an element of uncertainty regarding economic developments.

Jarle Bergo

Summary

Cyclical upturn and reduced global vulnerability

Growth in the world economy has picked up and earnings in listed companies have increased since *Financial Stability 2/2003*. Share prices in the largest markets have varied this year, but since the bottom in March 2003, prices have risen by 40-50%. The financial position of financial institutions, enterprises and households has strengthened, even though the value of both share and bond holdings has declined somewhat recently. The banking industry in many countries has recorded favourable results. On the whole, the vulnerability of the global financial system has been reduced. There is still uncertainty associated with the consequences for financial markets of the large imbalances in the US economy and an expected increase in interest rates internationally.

Improved performance at Norwegian banks

Norges Bank's key rate has been lowered by 0.75 percentage point since *Financial Stability 2/2003* and by 5.25 percentage points since December 2002. Stronger economic growth, partly as a result of lower interest rates, and an upswing in stock markets have made a positive contribution to bank performance in Norway. Banks' securities income has shown a marked increase and recorded loan losses have fallen. In addition, banks have reduced their operating expenses. On the other hand, the fall in interest rates has reduced banks' net interest income. Bank profits increased between 2002 and 2003, with a further improvement in the first quarter of this year. Performance in 2003 was nevertheless weaker than in the period 1993-2001.

Continued high growth in credit to households

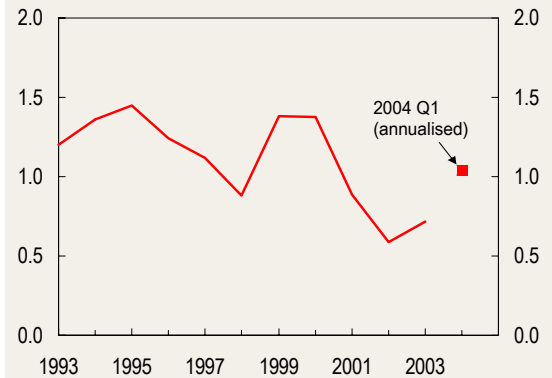
Credit growth has slowed somewhat since *Financial Stability 2/2003*. The difference in the rate of growth in credit to enterprises and households is widening. Enterprise debt has fallen. Household debt is still accelerating rapidly and far more rapidly than household income. The sharp rise in the value of dwellings in recent years is an important explanatory factor. Historically, house prices are high. After falling in the spring of 2003, house prices rose sharply in the latter half of the year. In recent months, however, the rise in house prices has slowed.

The interest rate decline has increased households' capacity to service their rapidly growing debt. At the same time, household financial wealth has increased. Debt and assets, however, are unevenly distributed among households. The increasing debt thus increases the vulnerability of households to economic disturbances.

Improved prospects for enterprises

The fall in interest rates and stronger economic growth have increased enterprises' debt-servicing capacity. Corporate

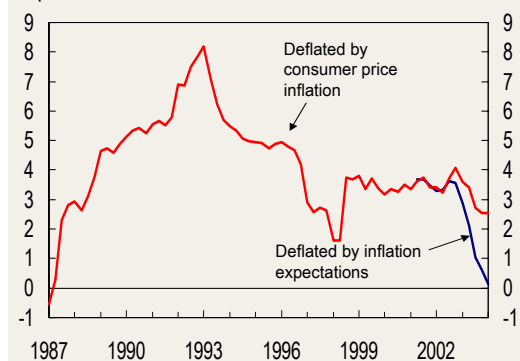
Chart 1 Banks¹⁾ pre-tax operating profit/loss on ordinary activities as a percentage of average total assets (ATA)



¹⁾ Excluding branches of Norwegian banks abroad. Including branches of foreign banks in Norway

Source: Norges Bank

Chart 2 Household borrowing rate after tax deflated by consumer price inflation¹⁾ and inflation expectations. Per cent

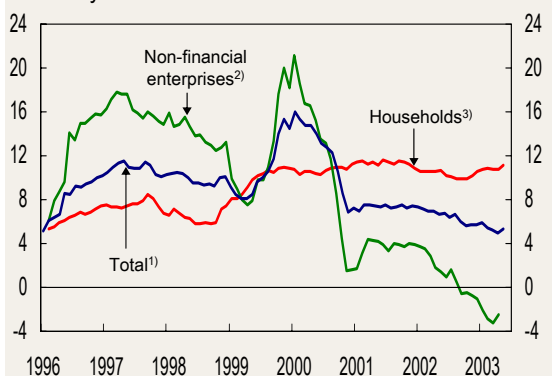


¹⁾ CPI excluding energy products until 1995, Norges Bank's calculations for CPI adjusted for taxes changes and excluding energy products until 2000 Q2, after that CPI-ATE

²⁾ Set equal to the inflation target of 2.5 per cent

Sources: Statistics Norway and Norges Bank

Chart 3 12-month growth in credit to mainland Norway. Per cent



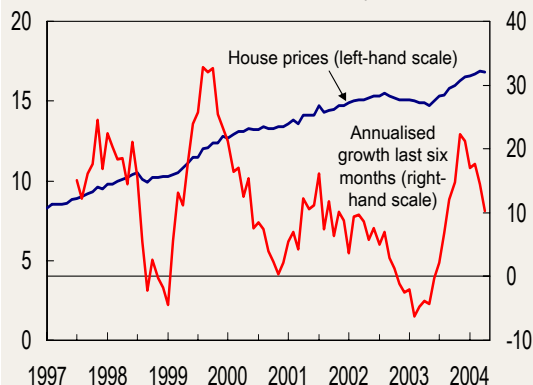
¹⁾ Credit from domestic and foreign sources to mainland Norway

²⁾ It is assumed that all foreign credit to mainland Norway goes to enterprises

³⁾ Households' gross domestic debt

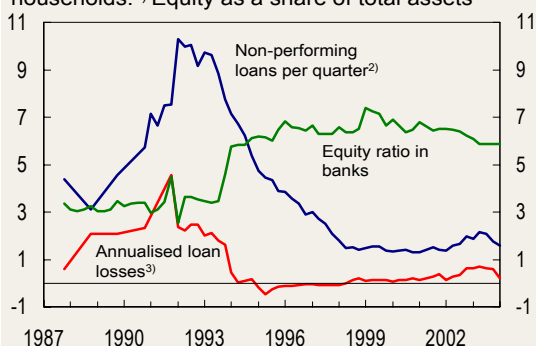
Source: Norges Bank

Chart 4 Seasonally adjusted house prices and annualised growth last six months. In NOK 1000 per sq. m. and per cent, respectively



Sources: Norwegian Association of Real Estate Agents, Association of Real Estate Agency Firms and Norges Bank

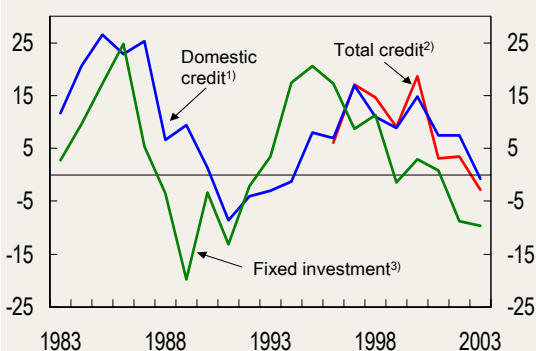
Chart 5 Non-performing loans and recorded loan losses in banks in per cent of gross lending to municipalities, non-financial enterprises and households.¹⁾ Equity as a share of total assets



¹⁾ Excluding branches of Norwegian banks abroad. Including branches of foreign banks in Norway
²⁾ Annual data for the period 1987-1990
³⁾ Annual data for the period 1987-1991

Source: Norges Bank

Chart 6 Annual growth in enterprises' credit and investments. Per cent



¹⁾ Growth in private, non-personal enterprises' domestic bond and loan debt. Year-end
²⁾ Growth in enterprises' aggregate credit. Year-end
³⁾ Annual growth in mainland fixed investment excluding public sector investments and households' housing investments

Source: Norges Bank

profitability improved between 2002 and 2003 as a result of increased turnover, rationalisation, lower interest expenses and a weaker krone exchange rate. The number of bankruptcies has fallen from the peak level in the second quarter of last year. Measured in terms of market value, the bankruptcy peak was reached in the latter half of 2002.

The property industry accounts for the largest share of bank lending. Enterprises that rent out office premises have been vulnerable in recent years as a result of falling rental income and property values. Other types of property enterprises have a higher level of earnings. The financial vulnerability of enterprises as a whole is assessed as moderate and somewhat lower than six months ago.

Unchanged liquidity risk

Banks have increased their share of stable funding somewhat since *Financial Stability 2/2003*. Increased bond debt has more than offset the fall in the share of funding from customer deposits. With the current low interest rate level, the share of bank funding from customer deposits is likely to continue to fall. It may be a challenge for small and medium-sized banks to procure alternative, competitive long-term financing. For banks as whole, liquidity risk is assessed as relatively low and roughly unchanged since *Financial Stability 2/2003*.

Satisfactory loss absorption capacity in the banking sector

With the economic outlook for 2004-2006 presented in *Inflation Report 1/2004*, banks will have a satisfactory capacity to maintain a capital ratio in excess of the statutory minimum requirement, even with relatively weak pre-loss profits. A pronounced economic downturn will have to occur for capital ratios to fall to the statutory minimum requirement. High growth in mortgage lending has reduced banks' equity ratios in recent years. Because housing loans have a low risk weight in the calculation of banks' capital adequacy ratios, their Tier 1 capital ratios remain virtually unchanged.

Satisfactory financial stability outlook

A lower interest burden and stronger economic growth have strengthened the debt-servicing capacity of the household and enterprise sectors. At the same time, household debt is expanding at a rapid pace. This has increased the vulnerability of households to future economic disturbances. Enterprises are continuing to reduce debt. Rising capacity utilisation in the economy should lead to renewed growth in investment, with an attendant increase in enterprise debt.

On balance, the short-term outlook for financial stability is satisfactory and has improved somewhat compared with the situation six months ago. However, the increased vulnerability of the household sector is an uncertainty factor as regards economic developments.

1 | International developments and Norwegian securities markets

International developments have an impact on the financial system in Norway through several channels. First, global economic developments have an impact on economic growth, inflation and the interest rate level in Norway. This influences the financial situation in the enterprise and household sectors in Norway and thereby the risk linked to bank lending. Second, developments in international securities markets have an impact on Norwegian markets, which in turn influence banks' income from securities trading for own account or on behalf of customers. Third, developments in securities markets and the international banking industry can influence Norwegian banks' funding costs. In addition, developments in large Nordic banks are important because Nordic banking markets have become more integrated.

The global financial system is less vulnerable than in November when *Financial Stability 2/2003* was published. Global economic growth has picked up, and listed companies have seen an increase in earnings. Equity prices have edged up. The balance sheets of financial institutions, enterprises and households have strengthened, even though the value of both equity and bondholdings has declined somewhat recently. There is a risk that low interest rates in many countries may have contributed to inflating assets prices to a level higher than that implied by fundamentals. Low short-term interest rates may have stimulated borrowing in order to invest in instruments with a higher expected return. This may have augmented the risk of a sharp price fall when interest rates rise.

1.1 International banking industry

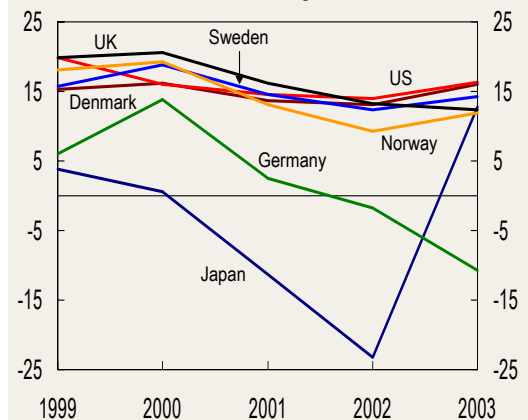
Improvement in bank performance in 2003

In spite of weaker economic developments and low interest rates in recent years, banks in many western countries have recorded solid results (see Chart 1.1). There are also signs of improvement in Germany and Japan, where the banking industry has been struggling for some time.

An important factor behind low earnings in German banks has been a very low level of net interest income, partly as a result of excess capacity and intense competition. In 2003, the weak return on assets was related to large extraordinary loss provisions. Excluding this factor, the largest banks recorded a marked improvement in operating results from 2002 to 2003.

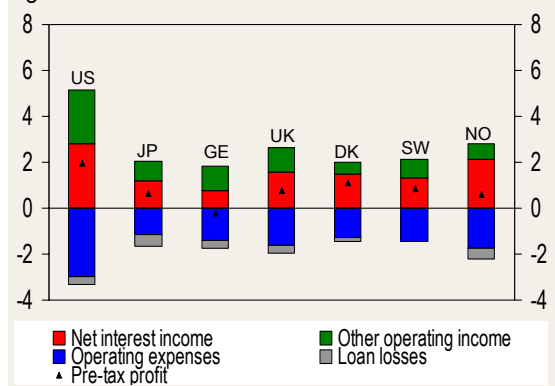
The largest Japanese banks also improved their situation in 2003, and posted a profit for the first time in several years. This is primarily ascribable to lower recorded loan losses and price gains on securities. However, substantial efforts

Chart 1.1 Return on equity for banks in various countries¹⁾. Per cent. Annual figures



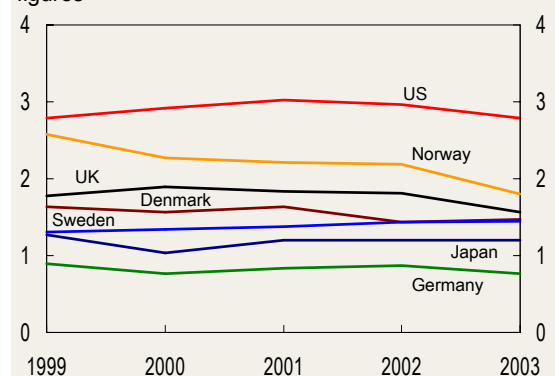
¹⁾ Selection of the largest banks. The figures for Norway cover all banks
Sources: Bankscope and Norges Bank

Chart 1.2 Result components for banks in various countries¹⁾. Percentage of total assets. Annual figures 2003



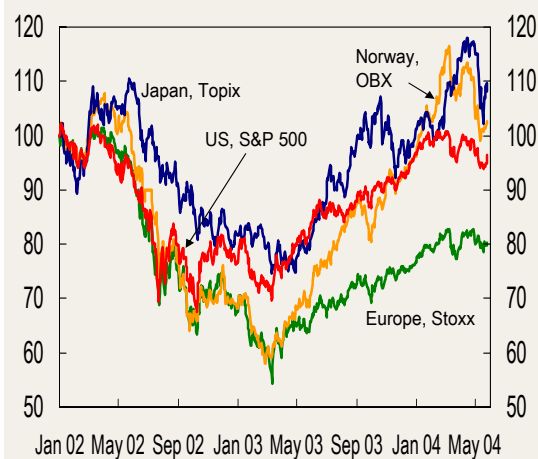
¹⁾ Selection of the largest banks. The figures for Norway cover all banks
Sources: Bankscope and Norges Bank

Chart 1.3 Net interest income for banks in various countries¹⁾. Percentage of total assets. Annual figures



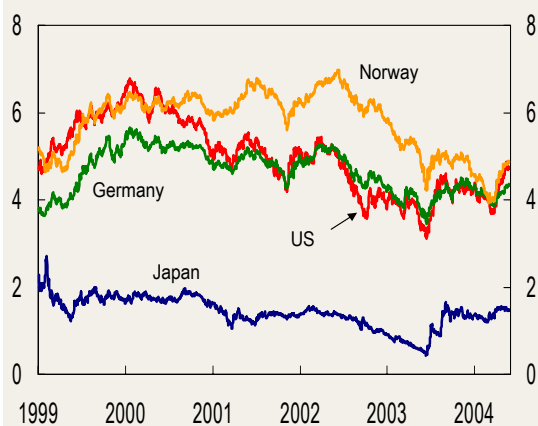
¹⁾ Selection of the largest banks. The figures for Norway cover all banks
Sources: Bankscope and Norges Bank

Chart 1.4 International equity indices. Indexed, 02.01.02 = 100



Source: EcoWin

Chart 1.5 Yield on government bonds with 10 years to maturity. Per cent



Source: EcoWin

Chart 1.6 Yield spread between US corporate bonds with various credit ratings and government bonds. Percentage points



Source: EcoWin

are still required to address the problem of bad loans, particularly in regional banks. At the end of the first quarter of 2004, non-performing loans accounted for 5.2% of total loans in the 11 largest banks, compared with 7.2% one year earlier.

Both large US and European banks strengthened their earnings in 2003 owing to higher securities income and lower loan losses. European banks have also improved earnings as a result of cost cuts. Danish and Swedish banks improved their performance somewhat in 2003 compared with 2002, primarily reflecting lower operating expenses and higher securities income (see comparison with Norwegian banks in Chapter 3.1). Nordic banks' loan losses have been relatively low. In Denmark, the bankruptcy rate for the enterprise sector has remained constant, even though company results have weakened in recent years. In Sweden, the bankruptcy rate has fallen over the past year. Household debt growth has increased in Denmark, Sweden and Finland. At end-March, debt growth stood at an annualised 8%, 10% and 14%, respectively.

Stable net interest income in spite of low interest rates

Net interest income has a considerable impact on banks' results (see Chart 1.2). Net interest income is partly influenced by changes in central banks' key interest rates. When key interest rates are cut to low levels, banks' deposit rates approach a floor at zero and cannot fall further. This means that a fall in lending rates can weaken banks' interest margins and thereby their net interest income.

However, a comparison of accounting figures for a selection of the largest US banks and European banks shows that net interest income has only declined marginally in recent years, measured as a percentage of total assets (see Chart 1.3). Net interest income has been particularly stable in countries that already had low net interest income. This applies to several countries such as Germany. The Scandinavian countries have seen a somewhat larger decline in net interest income.

Developments in net interest income partly reflect the stock of fixed-interest loans (see box in Chapter 2). Many banks have also used derivatives to hedge against interest rate changes. Balance-sheet structure has also influenced the impact of interest changes on net interest income. For example, Norwegian banks have a relatively large volume of loans outstanding and a low share of fixed-interest loans. As result, the fall in interest rates has had an impact on their net interest income. US banks have a relatively large share of consumer loans. Interest rates for these loans are fairly stable, which contributed to a more steady level of net interest income. At the same time, very low short-term interest rates have reduced banks' funding costs. Many banks have also profited from the relatively wide difference between short and long rates by taking positions in derivatives.

1.2 International securities markets

Equity prices have advanced by 5-20% on the largest stock markets since *Financial Stability 2/2003*, in spite of a considerable decline in recent months (see Chart 1.4). Equity prices are now 40-50% higher than at bottom in March 2003. A pick-up in economic growth and improved corporate earnings have contributed to the stock market recovery. Annual earnings for listed companies in the US and Europe increased by 20% and 50%, respectively, from 2002 to 2003. Analysts project that the increase will be somewhat lower this year. Stronger economic growth and somewhat higher inflation have also led to an increase in long-term interest rates in recent months (see Chart 1.5). Expectations of an interest rate increase and high oil prices have contributed to the recent decline in equity prices.

Search for yields

Relatively low returns on government bonds have induced investors to seek higher returns in equity markets, corporate bond markets and emerging economies. Growing confidence in stronger economic growth may have reduced the expected risk associated with such investments. In the US, the yield differential between bonds issued by corporations and government bonds has narrowed further since last autumn (see Chart 1.6). However, the yield differential for low-grade debt instruments has increased somewhat this year.

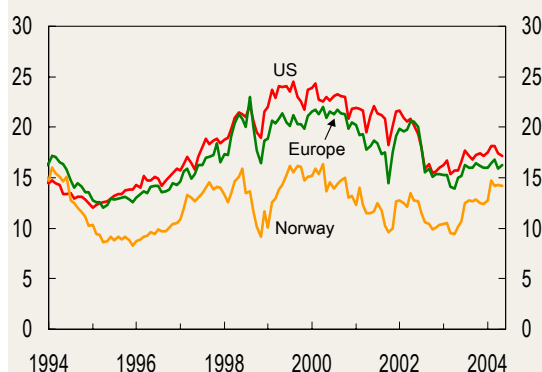
The rebound in equity prices has been stronger than expected growth in earnings. As a result, the P/E ratio has increased since the beginning of 2003 (see Chart 1.7).

The increase in the P/E ratio and the fall in risk premiums on corporate bonds may indicate that investors have been willing to take more risk. This is supported by the fall in implied volatility using options on the S&P 500 Index through 2003, down to its lowest level since 1996. Investors' willingness to take risk, as measured by global investors' purchases and sales of risky assets in relation to their total holdings in the countries where they invest, increased through 2003. Willingness to take risk has fallen again this year, however (see Chart 1.8).

A more active search for returns increases the risk of herd behaviour, where investors may take positions in less liquid and less transparent markets. Risk perceptions may change rapidly and trigger a steep fall in prices.

Direct investment in China accounted for close to 90% of total direct investment in emerging economies in Asia in 2003. This has contributed to a sharp increase in fixed investment, which now exceeds 40% of GDP. The Chinese central bank's purchases of foreign exchange to maintain the value of the national currency against the US dollar have

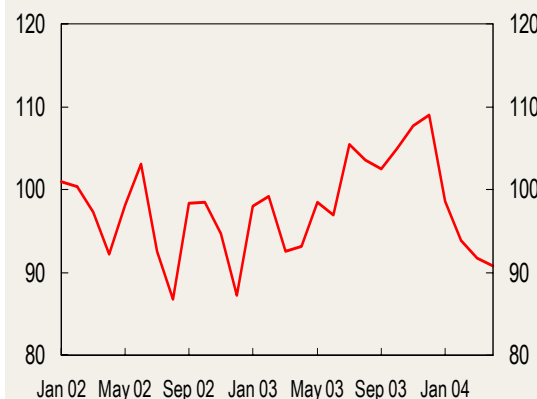
Chart 1.7 Relationship between share price and earnings¹⁾ (P/E) for listed companies in the US, Europe and Norway



¹⁾ Based on earnings estimates one year ahead for companies in the S&P 500 Index and the FTSE Europe Index and most companies on the Oslo Stock Exchange

Source: I/B/E/S Datastream

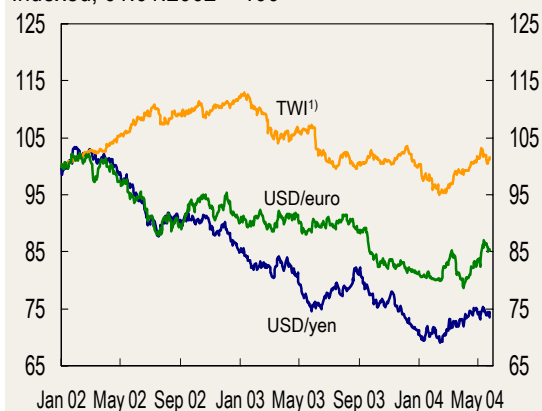
Chart 1.8 Investors' willingness to take risk. State Street Investor Confidence Index¹⁾



¹⁾ A rising index denotes increased willingness to take risk

Source: EcoWin

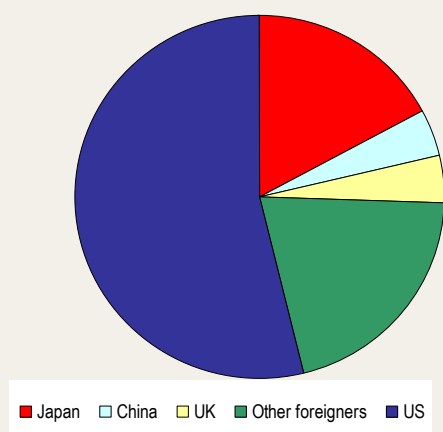
Chart 1.9 Exchange rates. Daily quotations. Indexed, 01.01.2002 = 100



¹⁾ Trade-weighted exchange rate index, inverted

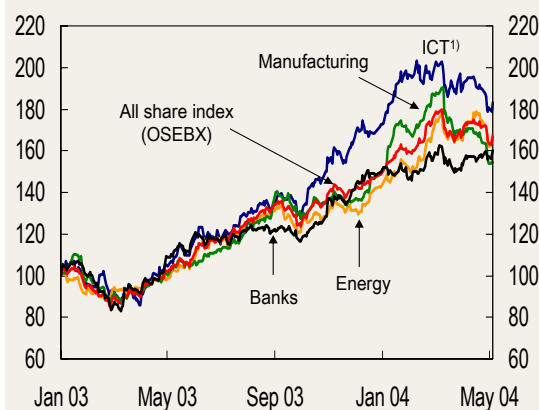
Sources: EcoWin and Norges Bank

Chart 1.10 Distribution of owners of US government debt. March 2004. Per cent



Source: United States Department of the Treasury

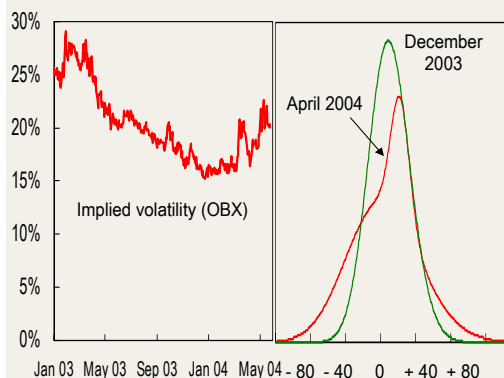
Chart 1.11 Sub-indices on the Oslo Stock Exchange Indexed, 01.01.03 = 100



¹⁾ Weighted average of the telecom index and the IT index

Source: EcoWin

Chart 1.12 Implied volatility and risk-neutral probability distribution¹⁾, based on options on the OBX Index



¹⁾ Three weeks before maturity. Index value in relation to price on date indicated

Sources: EcoWin, Oslo Stock Exchange and Norges Bank

increased liquidity in the banking system. High liquidity has led to higher credit growth, high lending growth for banks and an increased risk of overinvestment. The Chinese authorities have attempted to restrain credit growth by tightening reserve requirements and temporarily prohibiting lending by some banks. A capital injection into two large state-owned banks has also been undertaken with a view to strengthening the banking sector.

Imbalances in the US remain an important source of uncertainty

The main uncertainty as to developments in international securities markets is whether it is possible to maintain a reasonable balance between the historically high current account deficit in the US and demand for US securities. Reduced demand for US securities can lead to a further depreciation of the US dollar (see Chart 1.9) and/or a fall in US equity and bond prices, with spillover effects on other markets. A sharp decline in securities prices will weaken financial institutions' balance sheets.

In addition to the US, Japan, China and the UK are the main international investors in the US government securities market (see Chart 1.10). While the high figures for the UK partly reflect many other countries' trading via banks in London, Japanese purchases primarily reflect the Japanese authorities' exchange rate policy and low returns on Japanese securities.

1.3 Securities markets in Norway

Sharp advances in the stock market

The Norwegian stock market has recorded stronger advances than the largest international stock markets since *Financial Stability 2/2003* (see Chart 1.1). The P/E ratio for the Norwegian stock market has risen since spring 2003 (see Chart 1.7). Rationalisation, lower interest rates, high oil prices and the depreciation of the krone in 2003 (see Chart 1.9) have contributed to improving performance among listed companies. Analysts' estimates for companies' results in 2004 have been revised upwards considerably since *Financial Stability 2/2003*.

The upswing in the Norwegian stock market has been broad-based (see Chart 1.11). Since the end of 2003, high oil prices have contributed to a steep increase in the energy index. The bank index has shown a somewhat weaker rise than the other sub-indices.

Growing uncertainty

The uncertainty in the Norwegian stock market can be measured by implied volatility using options on the OBX index. Uncertainty declined through 2003, but has risen again since the bottom reached at year-end (see Chart 1.12). Option prices also indicate that investors have recently perceived the risk of a price fall as higher than in December.

As has been the case in international securities markets, low interest rates in Norway seem to have induced investors to seek alternative returns in other markets such as the stock market. The recent rise in the implied volatility index may indicate that investors have reassessed the risk associated with such investments.

High equity turnover

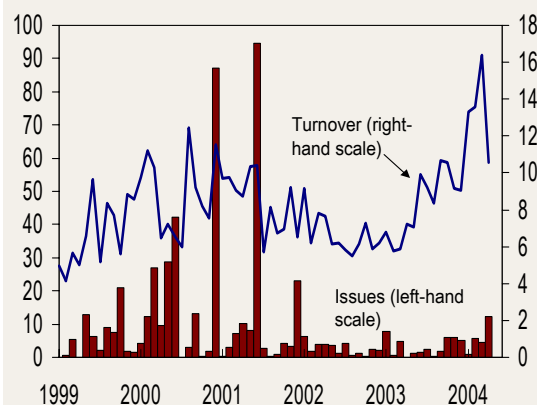
The equity turnover on the Oslo Stock Exchange has increased considerably, in tandem with the upswing in the stock market. In 2004, the previous record turnover level in 2000 was passed (see Chart 1.13). However, bond turnover remained unchanged in the same period.

Higher equity prices have boosted issue activity (Chart 1.13). The value of shares and primary capital certificates on the Oslo Stock Exchange increased by 18% from 2002 to 2003. Bonds issued by private enterprises rose by 12% in the year to mid-2003. However, issuance by Norwegian private non-financial enterprises in the Norwegian bond market is relatively limited (see Chart 1.14 and Table 1 in Annex 1).

Risk in the banking sector is assessed as low

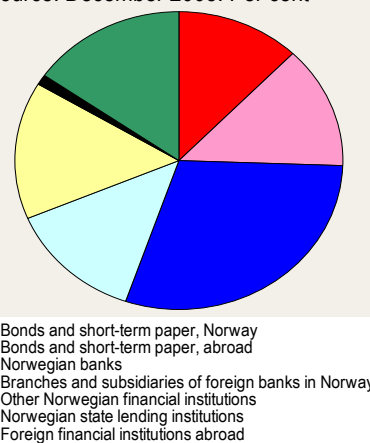
The risk premium on bonds issued by Norwegian banks, as measured by the yield differential against government bonds, is low and has narrowed since *Financial Stability 2/2003*. The probability of default¹ by Norwegian banks fell up to November 2003, but has since edged up (see Chart 1.15). A higher default probability probably reflects increased volatility in prices for bank shares and primary capital certificates.

Chart 1.13 Turnover of shares and share issues on the Oslo Stock Exchange. In billions of NOK. Monthly figures



Source: Oslo Stock Exchange

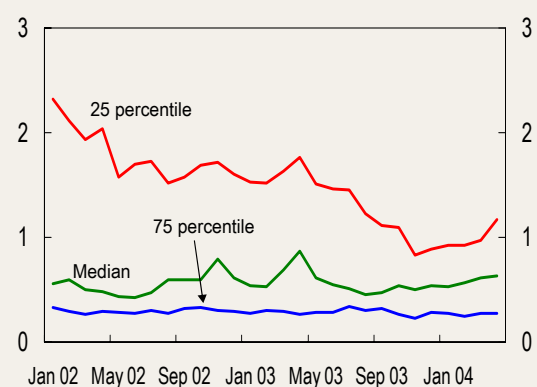
Chart 1.14 Debt¹⁾ in non-financial enterprises by funding source. December 2003. Per cent



¹⁾ Debt to suppliers, accrued direct and indirect taxes and debt to holding companies are excluded

Source: Norges Bank

Chart 1.15 Probability of default for Norwegian commercial and savings banks¹⁾. Per cent



¹⁾ Probability of default within 3 years

Source: Moody's KMV

¹ For a further discussion on this indicator, see box in *Financial Stability 2/2003*.

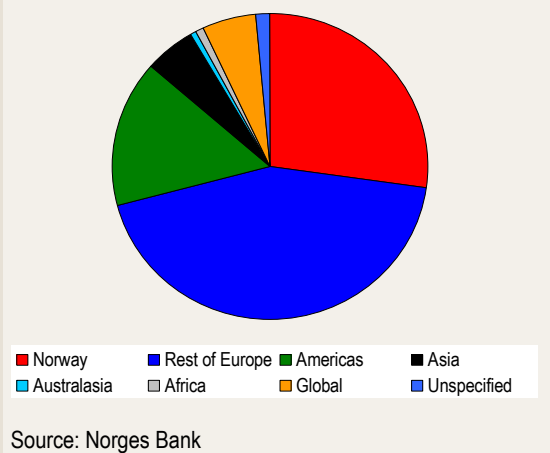
How Norwegian is the Oslo Stock Exchange?

National markets for goods, services and capital are becoming ever more closely integrated. This has a bearing on which factors will have an influence on developments in national financial markets. In this box, we look more closely at how globalisation is affecting price developments on the Oslo Stock Exchange.

One of the most commonly used indicators of globalisation of the Oslo Stock Exchange is developments in foreign ownership. The share of foreign ownership has remained fairly stable in recent years at around 30%. Less is known about the extent of international activity in listed companies. This influences how global economic conditions affect price developments in the Norwegian market. It may influence investors' choice of where to invest, which in turn may affect the supply of capital for companies that choose to be listed on the Oslo Stock Exchange.

How international a company is can be measured in several ways. The geographical distribution of employees is one possible indicator. At end-2003, about 35% of the employees in the companies that make up the Oslo Stock Exchange Benchmark Index¹ worked in Norway. The geographical distribution of the companies' operating income indicates how dependent they are on markets outside Norway. Foreign customers accounted for almost three quarters of listed companies' operating income in 2003. Of this, about 60% came from customers in other European countries (see Chart 1).

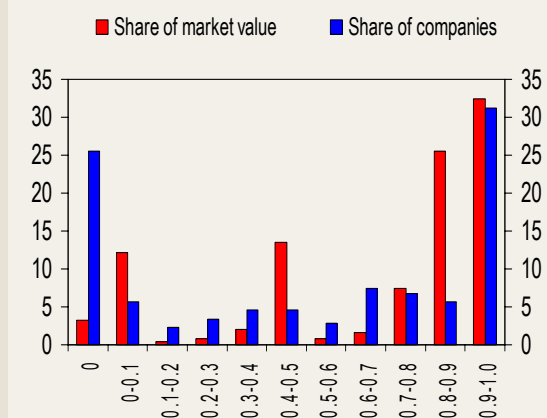
Chart 1 Geographical distribution of operating income in companies listed on the Oslo Stock Exchange. 2003. Per cent



A distinguishing feature of the Oslo Stock Exchange is that large groups of companies are either very national or very international. Most of the largest companies are also among the most international (see Chart 2). There is a positive correlation between market value and

foreign sales in all industries. This may be due to the relatively small customer base in Norway, which limits enterprises' potential for achieving a high turnover and market value.

Chart 2 Listed companies by share of operating income outside Norway in 2003. Market value and number of companies compared with total. Per cent



UNCTAD² has developed a measure of companies' multinationality – the Transnationality Index (TNI). The TNI is the average of the ratio of foreign to total for sales, assets, and employment. Of the companies in the OBX Index³, technology and shipping companies score highest in the TNI. Financial conglomerates are at the other end of the scale.

Regression analysis can shed light on the extent to which price developments in companies on the Oslo Stock Exchange can be explained by global developments.⁴ Sensitivity to international price movements increases in pace with the portion of operating income that comes from abroad. This indicates that the extent of companies' international activities is reflected in equity prices. Investors that seek exposure to developments in the Norwegian economy must therefore select equities with this in mind. On the other hand, considerable international diversification can be achieved through a portfolio of equities listed on the Oslo Stock Exchange. If geographical exposure is to be given weight when investing in equities, investment choices should be made on the basis of company activities rather than the stock exchange on which the company is listed.

¹ The Oslo Stock Exchange Benchmark Index (OSEBX) is a representative index for the Oslo Stock Exchange and consists of approximately 50 stocks.

² United Nations Conference on Trade and Development

³ The OBX Index is made up of the 25 most liquid securities in the OSEBX.

⁴ For a discussion of method, see Diermeier and Solnik (2001): "Global pricing of equity", *Financial Analysts Journal*, Vol. 57, No. 4.

2 | Macroeconomic developments, households and enterprises

2.1 Developments in the Norwegian economy

Activity in the Norwegian economy is picking up. In *Inflation Report 1/2004*, it was projected that mainland GDP growth would be relatively high in 2004 and over the next two years compared with 2003 (see Table 2.1). The international recovery has also gained a firmer foothold.

Norges Bank's key rate has been reduced by 0.75 percentage point since *Financial Stability 2/2003* and by a total of 5.25 percentage points since December 2002. The key rate is now 1.75%, which is historically low. The krone depreciated through 2003 and at the beginning of 2004, but has appreciated in recent months (see Chart 1.9). The underlying rise in prices in Norway is very low.

Private consumption expanded by a good 3.5% in both 2002 and 2003. The growth rate at the end of 2003 and the beginning of this year points to stronger growth in 2004. Low inflation and reduced interest expenses are expected to contribute to high growth in household real disposable income in the period ahead. This, combined with the prospect of some improvement in labour market conditions, has induced households to remain optimistic about the future (see Chart 2.1).

Gross capital formation for mainland Norway fell by 4.9% in 2003. However, the growth rate picked up and was positive at the end of last year. Service industries accounted for most of the increase, but housing and manufacturing investment also rose. According to Statistics Norway's business tendency survey, Norwegian industrial leaders have become increasingly optimistic in their assessment of the short-term outlook (see Chart 2.2).

Petroleum investment exhibited brisk growth in 2003, primarily fuelled by investment in onshore installations. The average price of oil was USD 28.9 per barrel in 2003, which is the highest average annual price in 20 years. In April 2004, the average price was USD 33.4.

Since June 2003, the number of unemployed has gradually declined. In February 2004, seasonally adjusted LFS (Labour Force Survey) unemployment stood at 4.3%, compared with 4.6% on average in the second half of 2003. Unemployment is projected to edge down over the next few years.

Credit to mainland Norway as a percentage of GDP is at a historically high level (see Chart 2.3). Domestic credit to households is now increasing by around 11% at an annual rate (see Chart 3 in the Summary). The growth rate has ranged between 9% and

Table 2.1 Macroeconomic variables. Percentage change on previous year unless otherwise stated

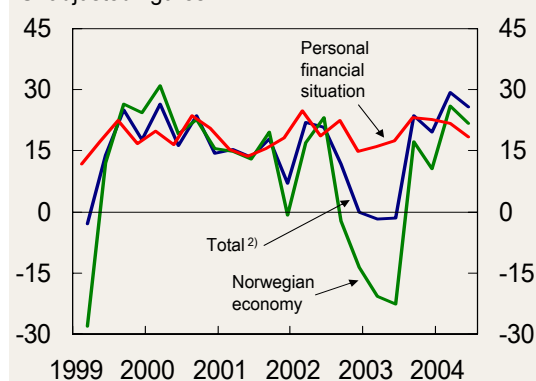
	Projections in <i>Inflation Report 1/2004</i> ¹⁾			
	2003	2004	2005	2006
Private consumption	3.7	5¼ (¼)	4 (½)	2¾
Public consumption	1.3	2¼ (¼)	1½ (0)	1½
Gross investment				
Mainland Norway	-4.9	1¼ (¾)	6 (1½)	6
Traditional exports	2.5	3 (1)	3½ (¼)	3½
Imports	1.8	5½ (¼)	3¼ (¾)	1¼
Mainland GDP	0.7	3¼ (¼)	3¼ (½)	2¾
GDP trading partners ²⁾	1¼	2½ (¼)	2½ (-¼)	2½
LFS unemployment (rate)	4.5	4½ (-¼)	4¼ (-¼)	4

¹⁾ Figures in brackets indicate the change in percentage points compared with the projection in *Inflation Report 3/2003*. Estimates with forward interest rate and forward exchange rate

²⁾ Weighted total with Norwegian exports used as weighting factor

Sources: Statistics Norway and Norges Bank

Chart 2.1 Consumer confidence indicator.¹⁾ Unadjusted figures

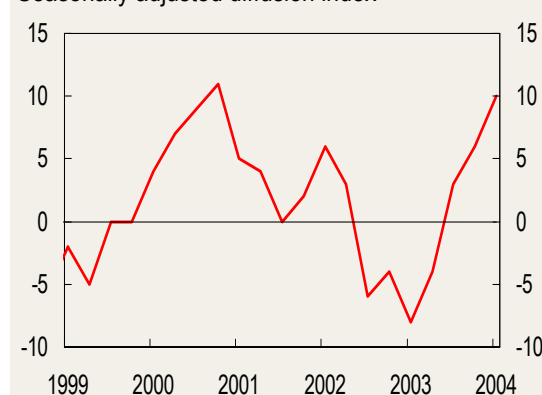


¹⁾ Indicates the share with a positive assessment of the current situation and outlook for the future less the share with a negative assessment

²⁾ This also includes expectations of major procurements

Source: TNS Gallup

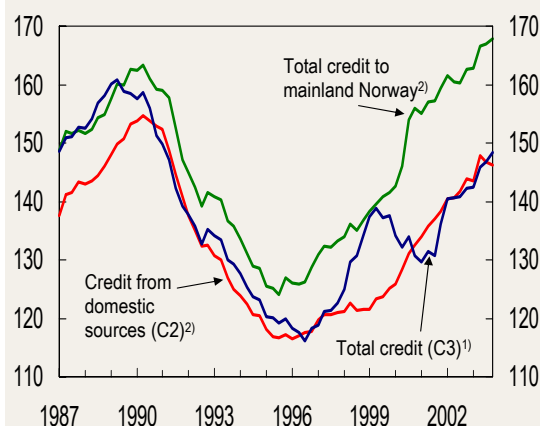
Chart 2.2 Business climate index. Seasonally adjusted diffusion index¹⁾



¹⁾ A value of less than 0 implies that the majority of industrial leaders expect a weaker outlook in the next quarter

Source: Statistics Norway

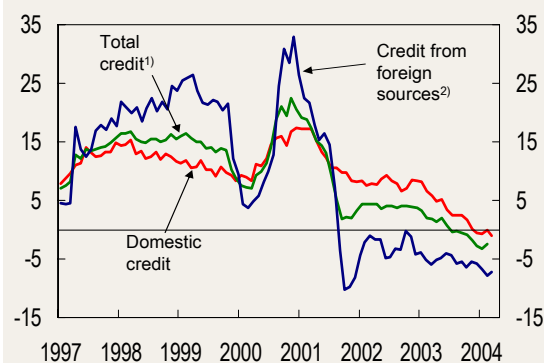
Chart 2.3 Credit as a percentage of GDP



¹⁾ Percentage of GDP
²⁾ Percentage of mainland GDP

Source: Norges Bank

Chart 2.4 Credit to mainland non-financial enterprises. 12-month growth. Per cent



¹⁾ Total credit from domestic and foreign sources
²⁾ Credit from foreign sources to mainland Norway. It is assumed that all credit from foreign sources goes to non-financial enterprises

Source: Norges Bank

Table 2.2 Gross financial assets, gross debt and housing wealth of households. In billions of NOK

	Dec.02	Sep.03	Dec.03
Bonds and short-term paper	23	26	28
Equities and primary capital certificates	164	186	191
Mutual funds	60	76	84
Insurance claims	505	539	559
Bank deposits	493	518	518
Other	205	217	225
Gross financial assets	1451	1562	1605
- Gross debt	1104	1176	1214
Net financial assets	347	386	391
+ Housing wealth ¹⁾	1629	1645	1731
Total net assets	1976	2032	2122
<i>Memorandum:</i>			
Gross financial assets excl. insurance claims	945	1023	1046

¹⁾ There is substantial uncertainty related to the housing wealth estimates

Source: Norges Bank

12% in the past four years. In February 2004, total credit to enterprises showed a year-on-year decline of 2.5%. The decline primarily reflects a fall in credit from foreign sources (see Chart 2.4).

There are a number of uncertainties associated with developments in the Norwegian economy in the period ahead. We have little experience of such substantial and rapid monetary policy easing as that seen over the past year and a half. A rising household debt burden means that private consumption will be more sensitive to interest rate changes. In addition, the interest rate level and the krone exchange rate influence enterprises' competitiveness and earnings.

2.2 Households

Continued sharp growth in both debt and financial assets

The increase in household debt is largely matched by an increase in financial assets (see Table 2.2 and Chart 2.5). Household debt rose by NOK 110bn from the fourth quarter of 2002 to the fourth quarter of 2003, while gross financial assets increased by NOK 154bn.

In order to analyse household transactions, we can disregard changes in insurance claims in group insurance schemes, which to a large extent consist of contributions by enterprises, and valuation changes as a result of changes in securities prices. Excluding such factors, household financial assets rose by NOK 80bn in 2003 (see Chart 2.6). Net investments in financial assets excluding group insurance claims have thus fallen to a negative NOK 30bn on an annual basis, from a negative NOK 5bn at the end of the 1990s. This implies that borrowing is now being channelled to consumption, investment in dwellings and other investments in fixed assets to a greater extent than to financial investments.

There is considerable uncertainty associated with calculations of households' net investments in financial assets. They amounted to NOK 3bn in 2003 according to Norges Bank's financial accounts, while according to the national accounts they were about NOK 31bn. The low figure in the financial accounts may indicate that disposable income has been lower or that consumption and/or households' gross investments in fixed assets have been higher than assumed in the national accounts.² The assessment of developments in household income and saving in recent years has been particularly difficult due to substantial fluctuations in share dividends as a result of the abolition of the tax on dividends followed by uncertainty concerning a reintroduction of dividend taxation. According to the national accounts, the household saving ratio rose from 4.2% in 2001 to 9.4% in 2002 before falling again to 7.5% in 2003. This must be viewed in connection with the increase in dividend payments to households, from NOK 13bn in 2001 to NOK 43bn and

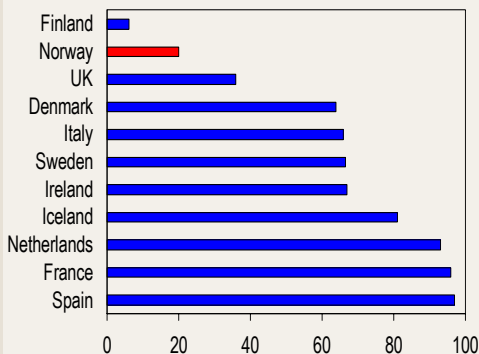
² The large dividend payments of recent years also create considerable challenges with respect to the estimation of household's financial investments in unlisted non-financial enterprises and abroad. For a more detailed analysis of the differences between net financial investments as measured in the financial accounts and in the national accounts, see Bø, Røstadsand and Tørum: "The reliability of today's financial macroindicators" in *Economic Bulletin* 3/2003.

Fixed-interest mortgages

With fixed-interest loans, the borrowing rate is set for a specific period. In periods when interest rates are generally rising, fixed-interest loans may contribute to financial stability because servicing the loans does not (immediately) become more demanding. On the other hand, borrowers with fixed-interest loans will not benefit from a fall in interest rates.

Historically, fixed-interest mortgages have not been common among Norwegian households. In 1994, fixed-interest mortgages accounted for 9% of the stock of loans to the household sector. A survey conducted by the Savings Banks' Association in 2003 estimated that fixed-interest mortgages accounted for 20% of their stock of housing loans to households. The share is low compared with other countries (see Chart 1). In Norway, the trend over time is the opposite of what is observed in Sweden and Denmark where shares of fixed-interest mortgages have fallen, but from considerably higher levels.

Chart 1 Fixed interest rate agreements on housing loans to households in selected countries. Percentage of holdings of households' housing loans



¹⁾ For Finland, total fixed interest rate agreements as a percentage of loans to households

Sources: ECB, Danmarks Nationalbank, Bank of Finland, Central Bank of Iceland, Sveriges Riksbank, the Norwegian Association of Savings Banks and The Economist 20.03.2004

The share of fixed-interest mortgages among new housing loans varies considerably from year to year (see Chart 2). The term of fixed-interest mortgages in Norway is often between 3 and 5 years.

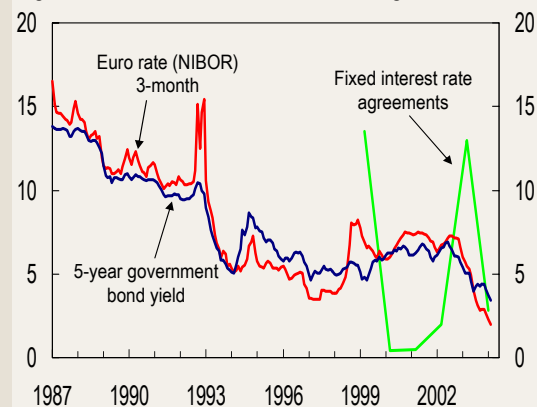
A fixed-interest mortgage removes the uncertainty associated with interest expenses during the term of the loan and contributes to the predictability of the borrower's expenses ("security motive"). Both the level of the fixed-interest rate and the fixed-interest rate relative to the floating interest rate may have a bearing on the choice of period for which the inter-

est rate is fixed ("speculation motive"). Although long-term interest rates are historically low now, the difference between long-term interest rates and floating interest rates is considerable, so that these two factors have opposite effects.

The fairly limited number of fixed-interest mortgages in Norway may be due to a number of factors connected with both supply and demand:

- Borrowers may want to have the option of changing their repayment plan and the period for which the interest rate is fixed. In Norway, it can be costly for borrowers to terminate a fixed-interest mortgage agreement. By comparison, the option of earlier loan repayment without a penalty charge is a standard term of fixed-interest mortgage agreements in the US and Denmark.¹
- Private home financing in Norway has traditionally been offered by banks and not mortgage companies. A larger presence of mortgage companies would probably result in a larger number of fixed-interest mortgages, because these companies obtain their funding in the bond market.
- Fixed-interest mortgages increase banks' interest rate risk if the banks have short-term financing. Small banks in particular may have lacked the expertise or financial resources to manage this interest rate risk.

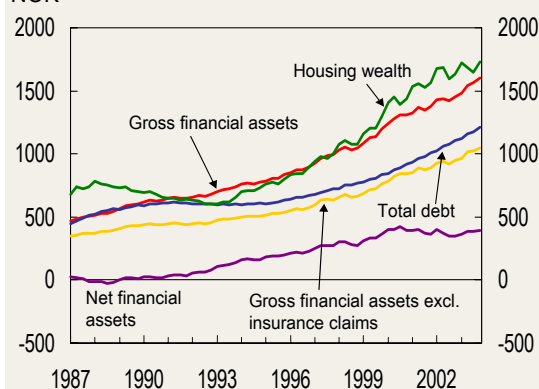
Chart 2 5-year government bond yield, the 3-month Euro rate (NIBOR) and fixed interest rate agreements as a share of new housing loans



Sources: Kredittilsynet and Norges Bank

¹ Mercer Oliver Wyman (2003): "Study on the Financial Integration of European Mortgage Markets", a study commissioned by The European Mortgage Federation, www.hypo.org and Frankel, Gyntelberg, Kjeldsen and Persson (2004): "The Danish Mortgage Market", *BIS Quarterly Review*, March 2004.

Chart 2.5 Household financial assets, debt, net financial assets¹ and housing wealth. In billions of NOK



¹ Break in the statistics for all time series except housing wealth in 1995 Q4

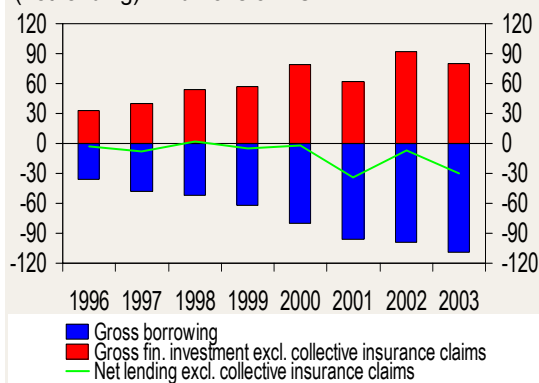
Source: Norges Bank

NOK 35bn in 2002 and 2003, respectively (preliminary figures). Total saving came to NOK 28bn, NOK 69bn and NOK 57bn in the three years, respectively.

House prices on the rise

Higher house prices are an important explanation for the sharp rise in household debt (see Chart 2.7).³ Mortgage loans account for more than 70% of household borrowing. The share of households that own their own dwelling is high in Norway compared with other countries. After falling slightly for the first half of 2003, house prices have risen at an annual rate of 10% in the last six months (see Chart 4 in the Summary). Since autumn 2003, the time it takes to sell a dwelling has also been reduced compared with the same period one year earlier. The driving forces for developments in house prices are discussed in a separate box on pages 22-23.

Chart 2.6 Household gross financial investment¹, gross borrowing² and net financial investment (net lending). In billions of NOK



¹ Gross financial investment and net financial investment excluding collective insurance claims

² Gross borrowing with a negative sign

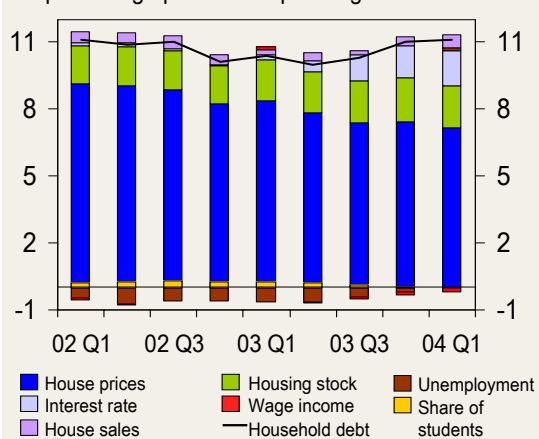
Source: Norges Bank

House prices are high in a historical context (see Chart 2.8). Deflated by the building cost index, house prices are 16% higher than in 1987. Deflated by the annual wage index, house prices are marginally lower than in 1987. However, viewed in relation to disposable income, which in addition to wages is influenced by employment and other income, house prices are still somewhat lower than in 1987.

Increase in housing loans noticeably higher than housing investment

Households can raise loans with collateral in dwellings that have increased in value. The loans may also be used for purposes other than house purchases and home improvements, such as consumption, repayment of debt, financial investments and other investments in fixed assets. When the net change in the stock of housing mortgages exceeds housing investment, mortgage equity withdrawal occurs. This has been widespread in, for example, the UK, the US, Australia, the Netherlands and Denmark. The increase in the value of dwellings, combined with low interest rates, has also resulted in mortgage equity withdrawal in Norway in recent years (see Chart 2.9). Mortgage equity withdrawal in Norway probably takes place largely in connection with house purchases and may therefore increase with the number of house sales. The housing loan survey conducted by Kredittilsynet (the Financial Supervisory Authority of Norway) shows a rising proportion of loans for refinancing and purposes other than house purchases, particularly in 2003 following the substantial decline in interest rates. A sample survey conducted by Kredittilsynet also indicates that growth in consumer loans from finance companies slowed in 2002 and 2003. The increase in the value of dwellings has contributed to better borrowing terms for refinancing home mortgages than for new consumer loans.

Chart 2.7 Household debt and estimated contributions from explanatory factors. Contribution in percentage points to 4-quarter growth



Source: Norges Bank

³ For a further discussion, see *Financial Stability* 2/2003, *Inflation Report* 2/2003, and a forthcoming article in *Economic Bulletin* 2/2004.

Rising debt burden, but falling interest burden

Households' debt-servicing capacity depends on their income, the size of debt and the interest rate level. The household debt burden, i.e. loan debt in relation to disposable income, rose rapidly in 2003 and is beginning to approach the high levels recorded at the end of the 1980s (see Chart 2.10).

Only the liquid portion of disposable income can be used to service debt. The debt burden figures will be higher if the return on insurance claims, which are generally illiquid, is deducted from income. The return on insurance claims has fallen as a share of disposable income since the 1980s when interest rates were high. The difference between the debt burden and adjusted debt burden was therefore greatest in the 1980s.

The household interest burden, i.e. interest expenses after tax in relation to liquid disposable income plus interest expenses, has declined in spite of the high rate of debt accumulation (see Chart 2.11). The main reason is the substantial decline in interest rates. The interest rate burden was reduced by 2.5 percentage points from the fourth quarter of 2002 to the first quarter of 2004.

Debt burden in different groups of households

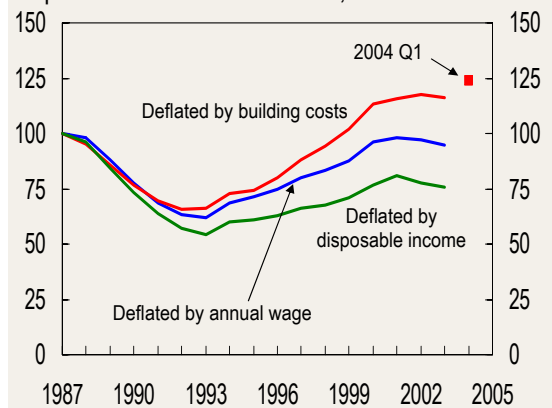
Developments in the interest burden of various groups of households have varied. It is particularly low- and middle-income households (deciles 1-6) that have seen an increase in their debt burden compared with the 1980s (see Chart 2.12). Households with higher income (deciles 7-9) have the highest debt burden. The debt burden in decile 10 was considerably higher than for other groups in the 1980s, but has since fallen markedly. One of the reasons is probably changes in the tax system at the end of the 1980s (reduction in tax deductibility of interest expenses, particularly for high-income groups) and in 1992.⁴

The debt burden rose in all income groups in 2002 (latest available data), with the exception of decile 10. High dividend payments contributed to higher income in 2002, particularly for households in the top income group, who own most shares. This pushed down the debt burden for decile 10 in 2002. From 2003, the debt burden has been projected using growth in the average debt burden based on macro figures (see Chart 2.10). Dividend payments were probably high again in 2003. This may contribute to slower growth in the debt burden in 2003 than in the projections, particularly for groups with the highest income.

The distribution of debt by age shows that it is in the higher age groups (over the age of 55) that the debt burden has increased since the period prior to the banking crisis. The debt burden is nevertheless still lower in these groups than in the other groups (see Chart 2.13). The rise in the debt burden in the age group 25-34 must be seen in connection with the start-up phase they are in and the sharp rise in house prices.

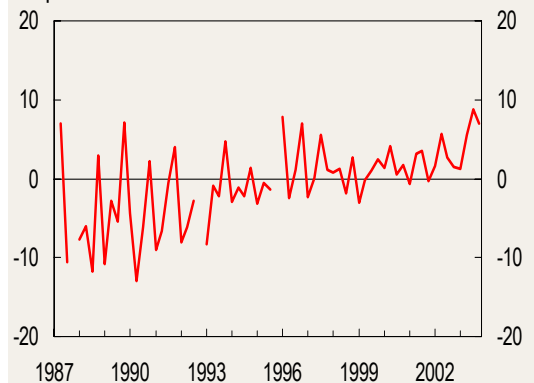
⁴ For a further discussion, see box in *Financial Stability 1/2002*.

Chart 2.8 House prices deflated by the building cost index, the annual wage index and the disposable income index. Index, 1987=100



Sources: Statistics Norway and Norges Bank

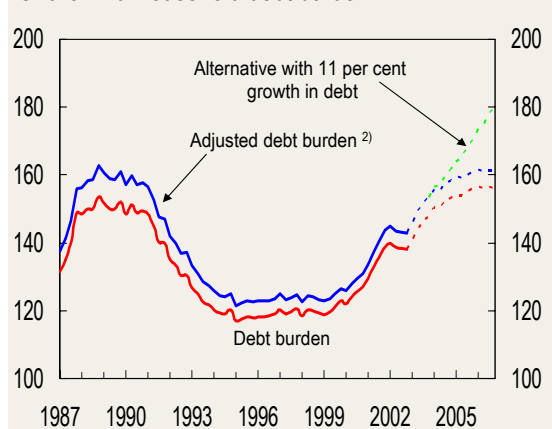
Chart 2.9 Mortgage equity withdrawal¹⁾ in per cent of disposable income



¹⁾ The difference between net change in the mortgage stock and investment in dwellings. Break in time series in 1987 Q4, 1992 Q4 and 1995 Q4. Estimates for 2003

Sources: Statistics Norway and Norges Bank

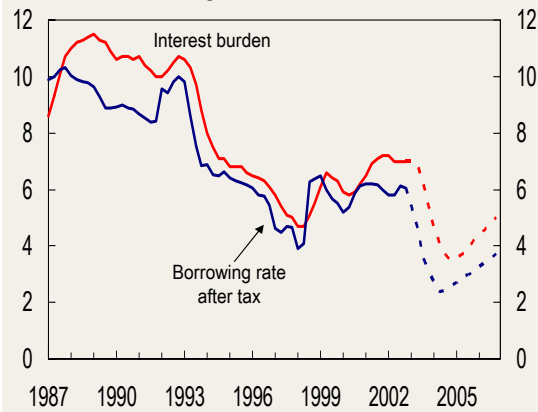
Chart 2.10 Household debt burden¹⁾



¹⁾ Loan debt as a percentage of disposable income
²⁾ Loan debt as a percentage of disposable income less return on insurance claims

Source: Norges Bank

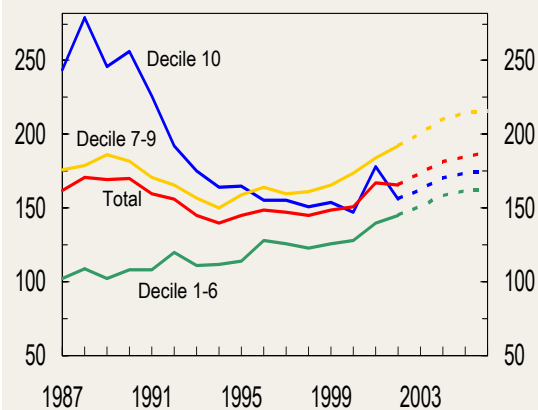
Chart 2.11 Household interest burden¹⁾ and household borrowing rate after tax



¹⁾ Interest expenses after tax as a percentage of liquid disposable income plus interest expenses

Source: Norges Bank

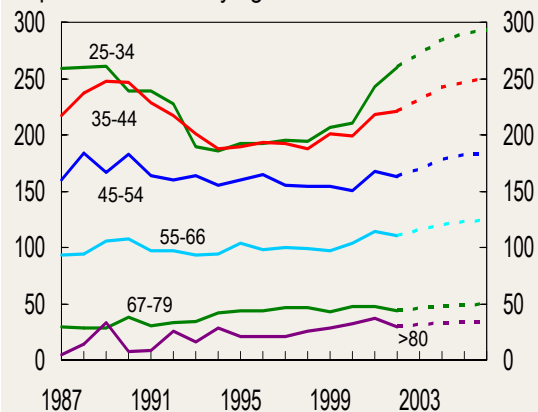
Chart 2.12 Debt in per cent of household disposable income by income level¹⁾



¹⁾ Estimates from 2003

Sources: Statistics Norway and Norges Bank

Chart 2.13 Debt in per cent of household disposable income by age¹⁾



¹⁾ Estimates from 2003

Sources: Statistics Norway and Norges Bank

It may have become more common and accepted to leave mortgaged assets to the next generation. Increased debt in higher age groups may also be based on a desire to adapt current consumption to expectations concerning future income. The financial buffers, financial assets in relation to debt, also showed an increase at the end of the 1990s, particularly in the age group 55-66. The financial buffers dropped from 2001 to 2002 for all age groups.

Developments ahead

Growth in household debt has been high for a long period. The projections are based on the assumption of a gradual deceleration of household debt growth to the same level as growth in disposable income at end-2006. The assumptions underlying the baseline scenario in *Inflation Report 1/2004* have otherwise been applied, including the assumption that unemployment edges down. In 2006, the household debt burden approaches the level prevailing at the end of the 1980s (during the banking crisis). Partly as a result of low interest rates, the household interest burden will remain fairly low in spite of high debt growth.

If household debt continues to expand at the current rate, the debt burden will increase rapidly and in the course of 2005 will exceed the level during the banking crisis (see Chart 2.10). The interest burden rises more than in the baseline scenario, but is relatively low due to low interest rates.

If the household interest burden were to reach the same level as at the end of the 1980s, interest rates would have to increase by 7 percentage points in relation to the baseline scenario at the end of 2005 (see Chart 2.11). This is 8 percentage points higher than today. As a simplification, it is assumed that other variables that influence the interest burden are the same as in the baseline scenario. In the calculations, household interest income rises, but inasmuch as household debt is greater than their interest-bearing assets, interest expenses rise at a faster pace.

All in all, the decline in interest rates has made it easier for households to service their debt. At the same time, growth in household debt remains strong and far higher than income growth. Household financial assets are also rising. However, debt and assets are unevenly distributed among households. Asset values often fall during downturns, while the value of debt remains the same. High and rising debt therefore makes households more vulnerable to economic disturbances such as higher interest rates, an increase in unemployment and a fall in house prices. However, flexible inflation targeting in monetary policy reduces the possibility that households are exposed to a dual shock in the form of higher unemployment and higher interest rates, as was the case at the beginning of the 1990s.

What drives house prices?

House prices have a major impact on household gross debt and wealth. The debt is largely secured by mortgage. A decline in house prices may therefore increase banks' loan losses. In this box, we will analyse developments in house prices using an empirical model.

House prices are determined by supply and demand. The supply is stable in the short term, however, since it takes time to build houses and since new construction each year is low compared to the housing stock. Therefore, prices for second-hand homes will fluctuate with demand in the short term.

The demand for owner-occupied dwellings depends primarily on housing costs, household income and household expectations concerning future income growth. Somewhat simplified, housing costs may be defined as interest costs minus the expected increase in the value of the dwelling.

Interest costs comprise interest expenses in connection with a mortgage as well as interest income that is relinquished when owning a dwelling. Higher interest rates increase housing costs and thus lower demand for dwellings. This puts downward pressure on house prices. Housing costs fall in pace with the expected rise in the value of the dwelling; if house price expectations edge up, it becomes relatively more favourable to purchase a dwelling now rather than later. The result is an increased demand for dwellings and higher prices today. Price expectations depend on observed developments in interest rates, income and house prices as well as household expectations of future interest rates and income growth in the Norwegian economy.

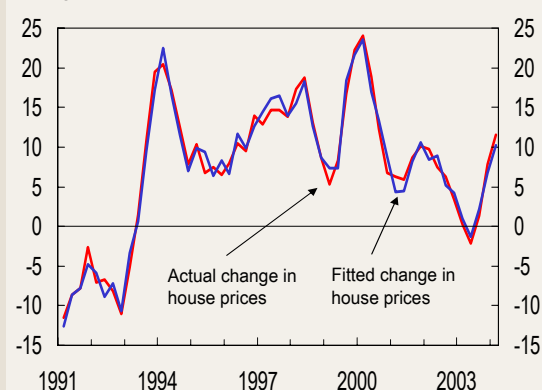
Developments in the labour market are important for households' expectations concerning their own and others' future income. Increased unemployment leads to expectations of lower wage growth and increased uncertainty concerning future income growth. Thus, demand for owner-occupied dwellings falls. Banks may also be more reticent about providing loans when unemployment rises.

The demand for dwellings also depends on population movement and demographic conditions such as cohabitation patterns, population size and the number of individuals in the start-up phase. Net migration to central areas has been positive in recent years. This has affected regional house prices in various ways but may also have changed average house prices for Norway as a whole.

We have estimated a model for house prices as a whole (see below). The model contains effects of the housing stock, the unemployment rate, banks' lending rates after tax, total wage income in the economy and an indicator of household expectations concerning their own finan-

cial situation and the Norwegian economy. We find no evidence that population movement or demographic conditions have a strong direct impact on house prices as a whole. However, demographic changes will affect prices indirectly by affecting overall wage income in the economy. The model is estimated on quarterly data from 1990 to the first quarter of 2004. It provides a good explanation of price developments (see Chart 1).

Chart 1 Actual and fitted house prices. Percentage change over 4 quarters



Sources: Norwegian Association of Real Estate Agents, Association of Real Estate Agency Firms, Finn.no, ECON and Norges Bank

The model implies that house prices will rise by $\frac{1}{2}\%$ in the first year and by $1\frac{3}{4}\%$ in the long term if wage income increases permanently by 1% and the other explanatory factors are unchanged. However, a rise in house prices will result in increased new construction and housing stock over time. House prices will fall by $1\frac{3}{4}\%$ in the long term if the housing stock, as measured in the national accounts, increases by 1%. In the period 1999-2003, the housing stock and wage income increased on average by 2% and 5% per year. If the housing stock and wage income grow at the pace prevailing for the last five years, house prices will increase by about 5% per year for a given interest rate and unemployment rate.

According to the model, house prices will fall by $2\frac{1}{4}\%$ in the first quarter and by $3\frac{1}{4}\%$ in the long term if banks' lending rates increase by 1 percentage point and the other explanatory factors are unchanged. The interest rate is measured at the end of each quarter. The strong short-term effect may therefore reflect the reaction of demand to changes in market rates before lending rates are changed. We do not find any significant effects of market rates other than those that are captured by lending rates.

The analysis indicates that house prices will fall by $10\frac{1}{2}\%$ over time if the unemployment rate increases from 4% to 5%. The adjustment is relatively sluggish: even though increased unemployment is quickly reflected in household expectations concerning the Norwegian economy, it takes longer for households to

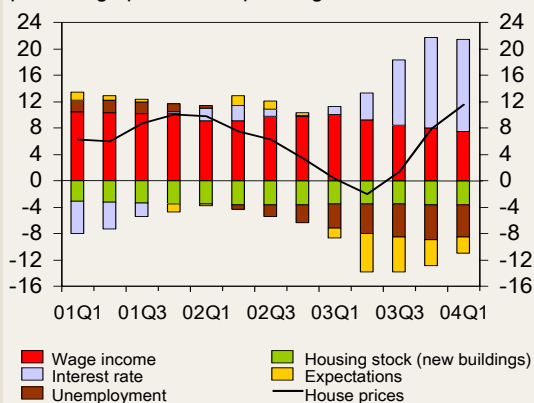
adjust their expectations concerning their own financial situation.

Interest rates and unemployment have a major impact on household expectations. Expectations may also shift as a result of a change in political conditions, new forecasts for the Norwegian economy and negative shocks such as war, terrorism and a fall in stock markets. The model captures such effects by including an indicator of household expectations concerning their own financial situation and the Norwegian economy. The indicator is calculated by correcting TNS Gallup's consumer confidence indicator for effects of the interest rate and unemployment. Therefore, it measures a shift in expectations that is due to factors other than changes in the interest rate and unemployment.

Chart 2 decomposes the rise in house prices in line with the estimated model. The calculations show that new construction pushed down four-quarter growth by 3-4 percentage points in the period from 2001 to the first quarter of 2004. Growth in wage income pushed up the rise in house prices by 9-10 percentage points in the first two years of the period. In 2003 and the first quarter of 2004, the rise in house prices was curbed by

lower income growth, increased unemployment and a negative shock in household expectations concerning the Norwegian economy in the first half of 2003 (see Chart 2.1 on page 16). The interest rate reductions since December 2002 have pushed up the rise in house prices by reducing interest expenses, boosting optimism and generating expectations of higher house prices.

Chart 2 House prices and estimated contributions from wage income, housing stock, unemployment, interest rate and expectations variable. Contribution in percentage points to 4-quarter growth



Sources: Norwegian Association of Real Estate Agents, Association of Real Estate Agency Firms, Finn.no, ECON and Norges Bank

The model discussed above is defined as follows:

$$\Delta houseprice_t = 0.12 \Delta income_t - 3.16 \Delta (INTEREST \cdot (1-\rho))_t - 1.47 \Delta (INTEREST \cdot (1-\rho))_{t-1} + 0.04 EXPEC_t$$

(1.94) (7.04) (3.27) (3.09)

$$- 0.12 [houseprice_{t-1} + 4.47 (INTEREST \cdot (1-\rho))_{t-1} + 0.45 unemployment_t - 1.66 (income - housingstock)_{t-1}]$$

(5.69) (2.54) (3.48) (8.63)

Estimation period: 1990 Q2 – 2004 Q1. $R^2 = 0.88$. Absolute t -values are shown in parentheses under the estimates. Δ is a difference operator: $\Delta X_t = (X_t - X_{t-1})$.

The variables are defined as (small letters indicate that variables are measured on a logarithmic scale):

- houseprice* = Price index for resale homes. Source: NEF, EFF, finn.no, ECON and Norges Bank
- INTEREST* = Banks' average lending rate. Source: Norges Bank
- ρ = Tax deduction for interest on debt (0.28 since 1992)
- EXPEC* = $(E-F) + 100 \cdot (E-F)^3$
- E* = Indicator of household expectations concerning their own financial situation and the Norwegian economy. Measured as a rate. Total over two quarters. Source: TNS Gallup
- F* = Value of *E* which can be explained by the interest rate, unemployment and seasonal variation. Calculated from an estimated model for TNS Gallup's consumer confidence indicator
- unemployment* = Unemployment rate. Source: The Directorate of Labour
- income* = Total wage income in the economy. Depends on the wage level and employment. Source: Statistics Norway
- housingstock* = Housing stock at constant prices. Source: Statistics Norway

The expression in square brackets measures the deviation between the house price in the last quarter and an estimated long-term relationship between house prices, the interest rate, the unemployment rate, wage income and the housing stock. The model also contains a constant and effects of seasonal variation. The values of *INTEREST* and *income* for 2004 Q1 are based on projections from *Inflation Report 1/2004*. The variable *EXPEC* is equal to zero in the period for which consumer confidence data from TNS Gallup is unavailable.

2.3 Enterprises

Improved profitability

Listed companies' annual accounts for 2003 indicate an improvement in corporate profitability compared with 2002, but there are considerable differences across industries. A rise in turnover, increased efficiency and lower interest expenses have contributed to improving profitability. The depreciation of the krone through 2003 also made a positive contribution to many enterprises.

According to preliminary national accounts figures, enterprises' gross interest expenses fell more than 11% from 2002 to 2003, while net interest expenses declined by over 7%. This is in fairly close accord with the percentage decline in interest expenses for large listed companies. If all interest-bearing debt in enterprises had been based on a floating krone interest rate, gross interest expenses should have fallen by more than 30%. There may be several reasons, in addition to fixed-interest loan agreements, why interest expenses have not fallen to this extent. One explanation is that a substantial portion of large enterprises' debt is in foreign currency, from countries where interest rates have fallen less than in Norway. The use of interest rate derivatives, which makes it possible to exchange a floating interest rate for a fixed interest rate on debt, may also have played a role. The return on equity before tax was 7.8% for the average enterprise in 2002. Judging by the balance sheet at the end of 2002, a reduction in net interest expenses of 7% will in isolation have boosted the return on equity by about half a percentage point in 2003.

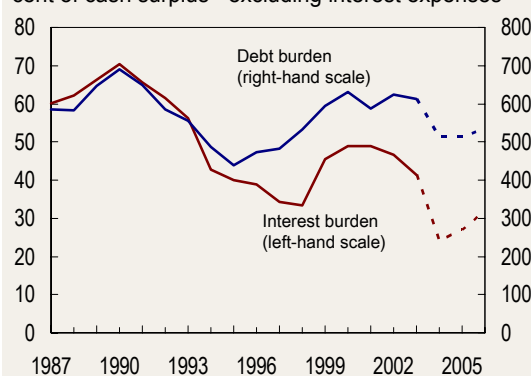
Record-high dividends

Allocations to dividends as a percentage of equity and dividends came to more than 7% in the 2002 accounting year. The proposed introduction of dividend taxation makes it likely that dividend allocations will again be high in the 2003 accounting year. An estimated increase in dividends from listed companies to private investors of about 60% from 2002 to 2003 has been reported. As a result of improved profitability, enterprises can pay large dividends without eroding their financial strength. Record payments for the 2002 accounting year only resulted in a small decline in the overall equity ratio from 2001 to 2002.

Lower debt and interest burden

The fall in interest rates in 2003 contributed to a lower interest and debt burden that year, even though debt in nominal terms was approximately unchanged (see Chart 2.14). Given developments in the Norwegian economy corresponding to the baseline scenario in *Inflation Report 1/2004*, the debt and interest burden will fall markedly this year.⁵

Chart 2.14 Debt and interest burden of non-financial enterprises excluding petroleum and shipping. Per cent of cash surplus¹⁾ excluding interest expenses²⁾

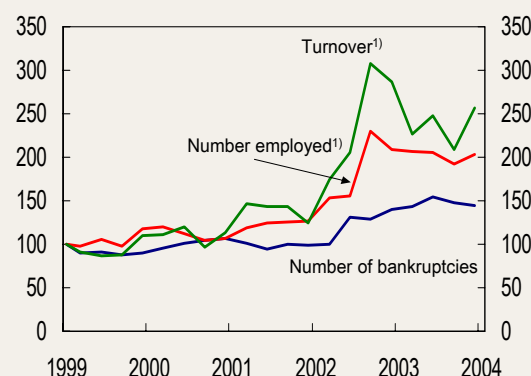


¹⁾ Cash surplus = Value added - labour costs + net capital income

²⁾ Annual figures, estimates from 2004

Sources: Statistics Norway and Norges Bank

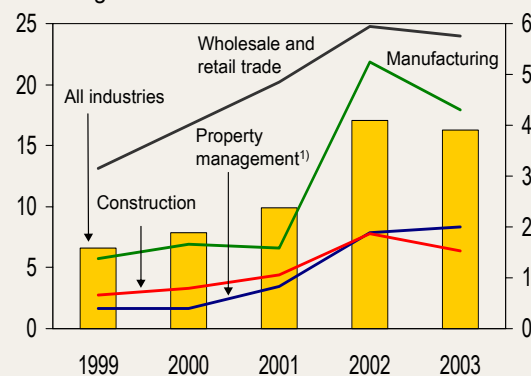
Chart 2.15 Number of bankruptcies, number of employees and turnover of bankrupt entities. Seasonally adjusted figures. Index, 1998 Q4 = 100



¹⁾ Turnover and employment in last normal operating year

Sources: Statistics Norway and Norges Bank

Chart 2.16 Turnover of bankrupt enterprises, total (left-hand scale) and for selected industries. Annual figures. In billions of NOK



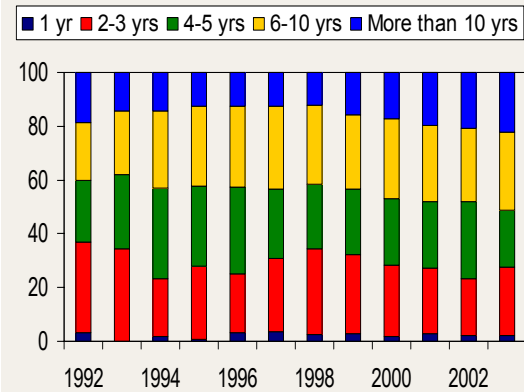
¹⁾ Property management, commercial services and rental activities

Sources: Statistics Norway

⁵ An upward revision of value added for enterprises in the most recently published national accounts figures has resulted in a downward revision of the interest and debt burden for enterprises in 2001 and 2002 in relation to the figures in *Financial Stability 2/2003*.

Fewer bankruptcies

Chart 2.17 Age¹⁾ of limited companies that went bankrupt in the years 1992-2003. Percentage



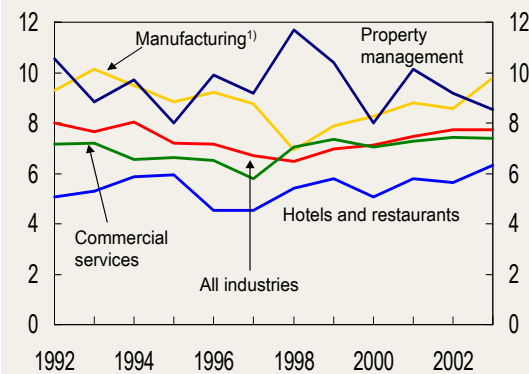
¹⁾ Age = year of bankruptcy - year of establishment

Source: Norges Bank

The number of reported bankruptcies rose by 17% from 2002 to 2003. However, the number of bankruptcies (seasonally adjusted) has fallen since peaking in the second quarter of 2003 (see Chart 2.15). CreditInform reports that the number of bankruptcies has continued to fall in the first four months of 2004. Measured by turnover and employment in bankrupt entities, the bankruptcy peak was passed in the second half of 2002. The total sales of the bankrupt entities fell by a little more than 1% from 2002 to 2003.

Of the major industries, it was only in the property management sector that the turnover of bankrupt enterprises showed an increase from 2002 to 2003 (see Chart 2.16). The turnover of unincorporated firms that went bankrupt more than quadrupled from 2002 to 2003, but still only accounted for 4% of the total sales of all bankrupt entities.

Chart 2.18 Average age of limited companies in different industries that went bankrupt in 1992-2003. Years



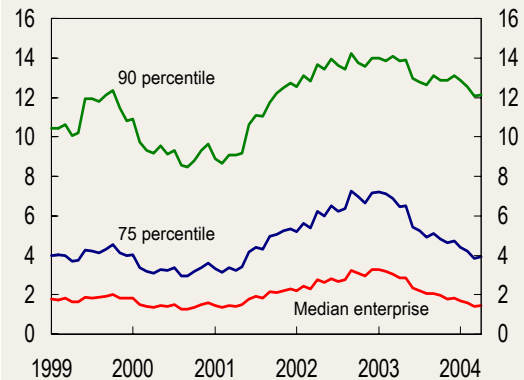
¹⁾ Excluding shipbuilding and mining

Source: Norges Bank

It is not only business start-ups that declare bankruptcy. An analysis of the age of enterprises that have gone bankrupt since 1992 shows that the proportion of older enterprises has increased in recent years (see Chart 2.17).⁶ After having fallen for several years, the proportion of bankrupt enterprises with a life of less than 4 years rose in 2003.

The average age of bankrupt enterprises declined up to 1998, but has since risen (see Chart 2.18). The industry with the most bankruptcies is wholesale and retail trade, and the average age of bankrupt enterprises in this industry is virtually identical to the average for all industries. The average age of bankrupt enterprises in manufacturing is higher than for most other industries. Bankrupt enterprises in property management are also characterised by a high average age. However, the average age has fallen somewhat in recent years. The hotel and restaurant sector is one of the industries with the lowest average age for bankrupt enterprises.

Chart 2.19 Expected default probabilities for large Norwegian unlisted enterprises.¹⁾ Monthly figures. Per cent



¹⁾ Non-financial enterprises with turnover of more than NOK 70 million. Probability of default within a year

Source: Moody's KMV

Default probabilities decline

According to Moody's credit risk model KMV, the probability of large Norwegian unlisted enterprises defaulting on their debt obligations declined through 2003.⁷ The decline has continued in 2004 (see Chart 2.19). Default probabilities for the most exposed enterprises (90 percentile) have, however, fallen less than for other enterprises. This indicates that the risk of losses on loans to this type of enterprise is still relatively high.

The default probability for the median enterprise in most industries has fallen over the past year (see Chart 2.20). In the shipbuilding industry, the default probability has declined by more than 4 percentage points since the end of 2002. There has also been a decline for service industries. Profitability problems in the fish farming industry have resulted in high default probabilities in this industry.

⁶ The analysis is based on Norges Bank's SEBRA database, which contains annual accounts for limited companies since 1988.

⁷ The model is briefly described in a box on the next page. For a further discussion, see box in *Financial Stability 2/2002*.

Predictions with two credit risk models

Norges Bank uses two different models to analyse financial exposure in the enterprise sector. Norges Bank's **SEBRA model**¹ predicts bankruptcy probabilities based on annual accounts figures for all Norwegian limited companies. The disadvantage of the SEBRA model is that new information comes in only once a year and that there is a time lag of nine months between the closing of the annual accounts and the availability of the accounts in the database. For example, the SEBRA model as at June 2004 is based on annual accounts from 2002. The model that Norges Bank uses from **Moody's KMV** predicts default probabilities for non-listed enterprises based primarily on market information. The model is based on some key variables from the annual accounts that are combined with developments and the volatility of equity prices for listed companies in the same industry and country as the enterprise in question. The KMV database in question is limited to large unlisted companies with annual turnover exceeding NOK 70m.

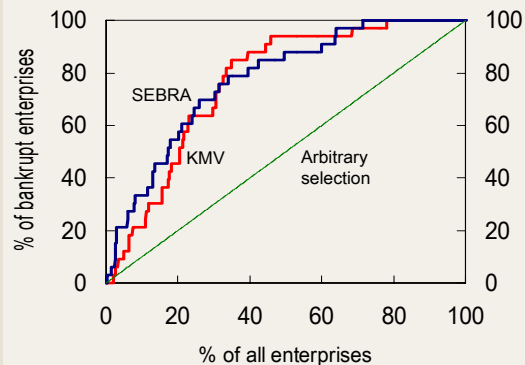
We have compared the SEBRA model with the KMV model, looking at the predictions after the accounting years 1998 - 2001 and bankruptcies in the three following years.² For example, the bankruptcies in the period 1999 - 2001 are used to evaluate the quality of the predictions after the accounting year 1998. For each of the accounting years, both the SEBRA and the KMV models include somewhat more than 3000 non-financial enterprises, excluding enterprises in the oil and gas industry. Of the enterprises represented in both databases in the accounting year 1998, 100 went bankrupt in the period 1999 - 2003, 33 of them in the period 1999 - 2001.

The SEBRA model predicts the probability of bankruptcy, whereas the KMV model predicts the probability of default on debt. An enterprise that defaults on its debt will not necessarily go bankrupt. Therefore, the default probability for an enterprise will never be lower than the bankruptcy probability. In practice, the default probability from the KMV model is considerably higher than the bankruptcy probability from the SEBRA model. There is reason to assume, however, that the ranking of enterprises, based on the bankruptcy and default probabilities (risk exposure), respectively, is approximately the same.

Chart 1 shows that the SEBRA and KMV models are approximately equal in their ability to pick bankrupt enterprises and are considerably better than a random selection. For example, with a ran-

dom selection, one would expect to find 20% of the bankrupt enterprises among the first 20% of enterprises selected. Close to 55% of the enterprises that went bankrupt in the period 1999 - 2001 were among the 20% of the enterprises that the SEBRA model predicted to have the highest risk exposure as at September 1999, while the comparable figure for the KMV model was more than 45%.

Chart 1 Power curve for credit risk models' predictions after accounting year 1998, based on bankruptcies in 1999 - 2001.¹⁾ Per cent



¹⁾ Share of bankrupt enterprises (vertical axis) in relation to share of enterprises (horizontal axis) when the enterprises are ranked from most to least risk-susceptible

Sources: Norges Bank and Moody's KMV

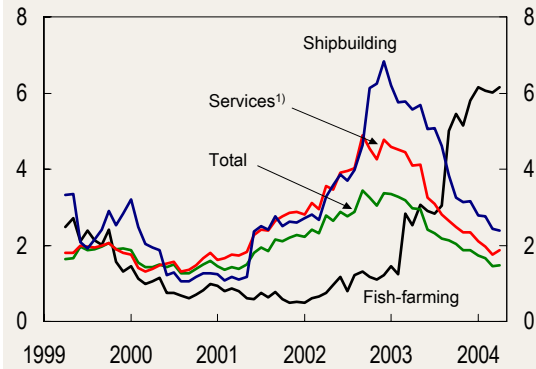
The KMV model has the advantage over the SEBRA model that it is based on current market data. To evaluate the significance of the market data, we have compared the KMV model's March predictions (15 months after the close of the accounting year) with the September predictions (9 months after the close of the accounting year). These two predictions are based on the same accounting data, but the March predictions use more recent market data. On the whole, the March predictions appear to be somewhat more accurate than the September predictions, indicating that current market information improves predictions.

A comparison of the SEBRA and KMV models shows that both models are effective in selecting bankruptcy candidates among large unlisted Norwegian limited companies. The SEBRA model's use of a larger number of accounting variables compensates for the KMV model's advantage of using updated market information. However, use of more recent market information improves the KMV model's prediction capabilities. A further development of the SEBRA model may therefore be to include some market indicators.

¹ The SEBRA model is described in Eklund, Larsen and Bernhardsen: "Model for analysing credit risk in the enterprise sector", *Economic Bulletin* 3/2001.

² Only in the two years following the accounting year 2001.

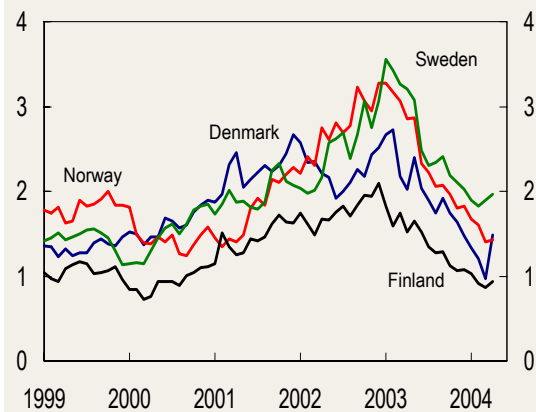
Chart 2.20 Expected default probabilities for large Norwegian unlisted enterprises in selected industries.¹⁾ Median observation. Monthly figures. Per cent



¹⁾ Comprises the groups transport, telecoms, IT, commercial services and the travel industry

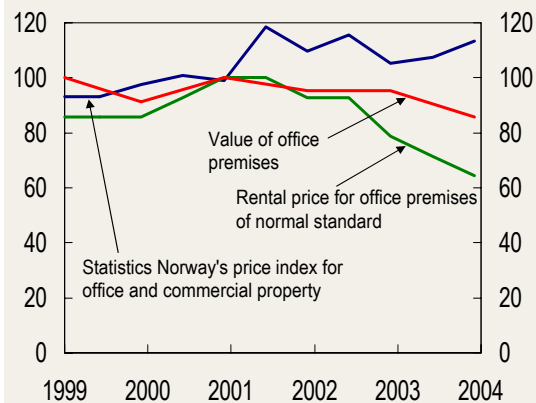
Source: Moody's KMV

Chart 2.21 Expected default probabilities for large Nordic unlisted enterprises. Median observation. Monthly figures. Per cent



Source: Moody's KMV

Chart 2.22 Prices for commercial properties. Value of and rental rates for office space in central Oslo. Index, 2000 = 100



Sources: Statistics Norway and OPAK

Since the end of 2002, the default probability for the median enterprise has fallen markedly in the Nordic countries (see Chart 2.21). With the exception of Sweden, default probabilities are close to the trough level for the last five-year period.

The main reason for the fall in default probabilities in Moody's KMV model is the rise in equity prices, which has increased the value of enterprises' assets. Reduced volatility in equity markets has until recently also contributed to the decline in default probabilities.

Risk associated with property companies

Property companies have higher debt financing than other enterprises. The property industry is also the largest recipient of bank loans. The sharp fall in interest rates since December 2002 has contributed to reducing the interest burden and thereby strengthened the debt-servicing capacity of property companies. Even enterprises with a large share of fixed-interest loans have now begun to benefit from the decline in interest rates.

Statistics Norway has constructed a price index for office and commercial properties in Norway. The price index is updated every six months and the first data were published this spring. Between end-2002 and end-2003, prices for office and commercial properties rose by 8% (see Chart 2.22). The index is nevertheless 4% lower than at the peak in the first half of 2001. Property companies are a diverse group that consists of enterprises influenced by developments in various markets. The situation is still weakest in the market for rental of office premises. Figures from OPAK show that both rental prices for office premises and the value of office buildings have continued to fall (see Chart 2.22). However, there are wide variations in developments in value, depending on the quality of leaseholders and length of leases. The decline in rental prices and the value of office premises in 2003 is confirmed by figures from Investment Property Databank. There is a marked difference in developments for different types of commercial property. For example, the value of shop premises increased in 2003.

According to Eiendomsspar's annual survey for the Oslo area, the rise in vacant office space is showing signs of slowing (see Chart 2.23). In contrast to 2002, rented space (in square metres) rose in 2003. Figures from Statistics Norway show that office and commercial building starts increased by 6% from 2002 to 2003, after having fallen by 30% from 2000 to 2002. This fall contributed to a decline of 18% in completed office and commercial buildings from 2002 to 2003. Eiendomsspar's survey shows that a sharp reduction in completed premises is expected in 2004 compared with recent years. This reduction, along with a brighter outlook for service industries, which heavily influence demand for office

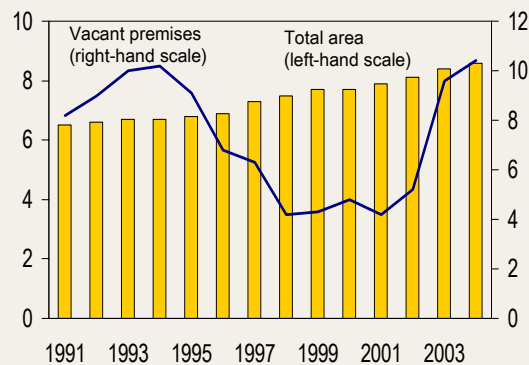
premises, may contribute to improving market balance in the years ahead.

Owing to property companies' substantial debt combined with a continued fall in rental prices for office premises, parts of this industry are financially vulnerable. However, low interest rates, higher growth in the economy and a reduction in probable new construction over the next few years help to make the situation somewhat brighter for property companies.

Developments ahead

The fall in interest rates since December 2002 has substantially reduced the interest burden of the enterprise sector. As a result, many enterprises can service their debt even with low operating margins. Enterprises' underlying earnings have improved. Higher growth in the Norwegian economy may contribute to further earnings growth. Although financial vulnerability varies across industries, we assess risk as moderate and somewhat lower overall than six months ago.

Chart 2.23 Total area of office premises in Oslo, Bærum and Asker (in millions of square metres) and vacant premises in per cent of total area¹⁾

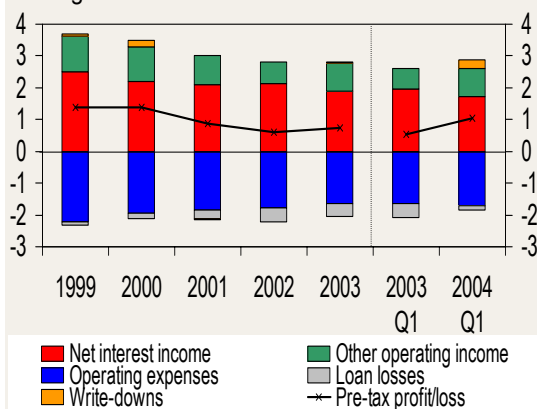


¹⁾ As of February

Source: Eiendomsspar AS

3 | Financial institutions

Chart 3.1 Banks¹⁾ profit/loss. Percentage of average total assets



¹⁾ Excluding branches of Norwegian banks abroad. Including branches of foreign banks in Norway

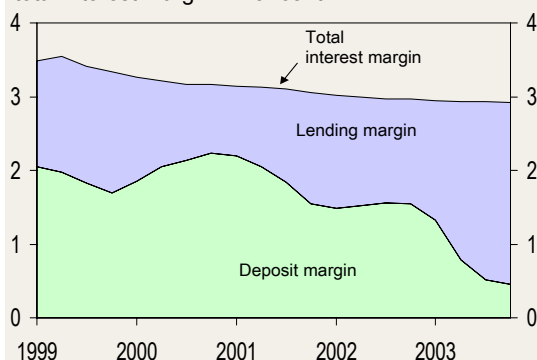
Source: Norges Bank

3.1 Developments in banks' results and financial strength

The decline in interest rates has contributed to higher growth in the Norwegian economy. The equity market has surged in the past year, and banks' sales of securities products have climbed. Both developments have boosted banks' earnings: Pre-tax profits in banks rose from 0.53% of average total assets (ATA) in the first quarter of 2003 to 1.04% of ATA in the first quarter of 2004 (see Chart 3.1 and Tables 2 and 3 in Annex 1).⁸ Results in the first quarter of 2004 were characterised by low loan losses, particularly in the two largest banks.⁹ DnB NOR's gain on the sale of Elcon Finans and restructuring costs made a positive net contribution to earnings.

The decline in interest rates contributed to reducing banks' net interest income from 1.96% to 1.74% of ATA from the first quarter of 2003 to the first quarter of 2004. This is primarily because banks are gaining less of an accounting advantage from financing some of their lending activities through net interest-free liabilities, including equity. It is also due to a slight decline in banks' overall interest margin (see Chart 3.2). The fall did not commence before the fourth quarter of 2003. This is because the lower limit of zero for deposit rates became more important than previously, while at the same time the competitive situation did not permit full compensation for this effect through increased lending margins. Information from banks' quarterly reports indicates that interest margins were still under pressure in the first quarter of 2004.

Chart 3.2 Banks' deposit and lending margins, and total interest margin¹⁾. Per cent



¹⁾ Interest margin is defined as the average of lending rates (excluding non-accrual loans) minus the average of deposit rates. 3-month money market rate (NIBOR) is used to split the interest margin into lending margin and deposit margin. The chart shows a moving average over the last four quarters

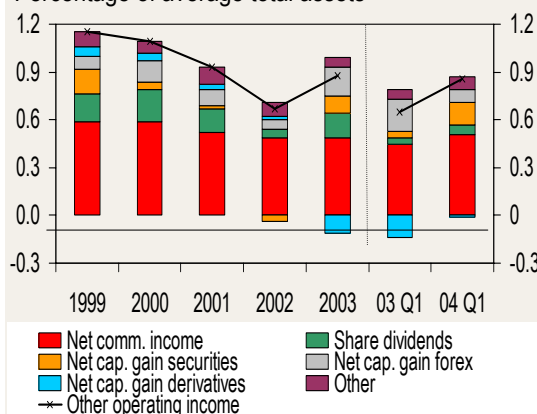
Source: Norges Bank

Other operating revenues have increased markedly as a result of capital gains, increased share dividend earnings and higher earnings from commissions on securities sales (see Chart 3.3). Since these are figures for parent banks, increased earnings from insurance companies forming part of financial conglomerates are not included. For example, life insurance revenues in the DnB NOR Group increased by NOK 1bn (0.15% of the group's ATA) from 2002 to 2003. A strongly improved result from Sparebank 1-Gruppen AS, where insurance accounts for a large share of activities, also contributed to an improved result for the banks that own the group.

Banks have become more cost-effective in recent years (see Chart 3.1). According to national accounts figures, the financial industry is among the sectors with the greatest improvement in productivity. Technological changes, sharp competition and consolidation have contributed. This trend is expected to continue.

Sluggish economic growth, the Finance Credit case and the fisheries and fish-farming crisis contributed to relatively high loan losses in 2002 (0.46% of ATA). These factors continued to

Chart 3.3 Banks¹⁾ other operating income. Percentage of average total assets



¹⁾ Excluding branches of Norwegian banks abroad. Including branches of foreign banks in Norway

Source: Norges Bank

⁸ Figures for the first quarter of 2004 are preliminary.

⁹ In order to obtain comparable figures, DnB and Gjensidige NOR Sparebank have been combined for the whole period shown by the charts. These two banks were formally merged on 19 January 2004. The merger at holding level took place on 4 December 2003. Nordlandsbanken and Postbanken are included in DnB NOR Bank. Nordea Bank Norway is the next largest bank.

affect loan losses in 2003, but there was a change for the better from the third quarter onwards. This indicates improved credit quality, which is also reflected in an appreciable fall in gross non-performing loans (see Chart 3.4). The decline in interest rates and increased economic growth contributed. Overall, loan losses dropped to 0.14% of ATA in the first quarter of 2004. Loan losses in the two largest banks were equivalent to 0.11% of ATA. The reduction in recorded losses compared with the same quarter in 2003 is due to reduced losses on both old and new loans, and the fact that unspecified loan loss allocations remained unchanged (see Table 3.1).

There have been no major changes in banks' financial strength. The Tier 1 capital ratio of the two largest banks fell from 8.4% to 7.8% from the first quarter of 2003 to the first quarter of 2004. The Tier 1 capital ratio of the other commercial banks rose from 10.3% to 10.9%, and in other savings banks from 11.4% to 12.0%. A number of savings banks have strengthened their Tier 1 capital by issuing preferred capital securities, a hybrid instrument that has features in common with both debt and equity capital.

The substantial improvement in the results of Norwegian banks has brought their return on equity up into line with the large Nordic banks (see Table 3.2). The large Nordic banks have long had very low loan losses, and have largely succeeded in maintaining the level of net interest income despite low interest rates (see also Chapter 1.2).

3.2 Risk outlook for banks

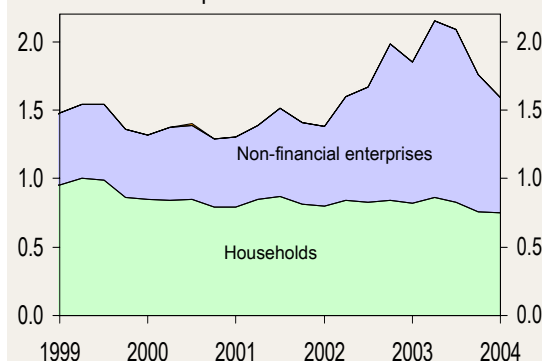
Banks are exposed to a number of types of risk. This section presents an assessment of banks' credit, market and liquidity risk (see box with definitions). Lending to households, non-financial enterprises and municipalities has accounted for 72%-74% of banks' total assets in recent years (see Table 3.3), making credit risk the primary source of risk for banks. Market risk is low in banks, as a relatively small share of banks' assets is invested in securities. Liquidity risk will depend partly on how large a share of long-term lending and other illiquid assets is based on long-term financing. Banks may also have drawing rights etc. on other banks that are not recorded on the balance sheet, but that affect liquidity risk.

The risks will be assessed separately, but may co-vary and/or influence one another. For example, a sharp fall in the equity market may coincide with weak economic growth and an increased risk of loan losses. Access to funding may be influenced by how funding sources assess banks' credit risk.

Credit risk associated with loans to the households

Mortgage-backed loans to households (including self-employed persons) increased from 82% to 83% of gross lending to households from the first quarter of 2003 to the first

Chart 3.4 Banks' holdings of gross non-performing loans to households and non-financial enterprises. Percentage of gross lending to municipalities, non-financial enterprises and households



¹⁾ Excluding branches of Norwegian banks abroad. Including branches of foreign banks in Norway

Source: Norges Bank

Table 3.1 Losses in the seven largest banks. In millions of NOK

	2002	2003	2003 Q1	2004 Q1
Actual losses, not covered by previous loss allocations	561	2472	867	253
+ Increased loss allocations on existing loans	478	847	362	277
+ New specified loss allocations	3471	3296	789	457
- Reversal of specified loss allocations	-753	-1371	-727	-638
+ Increase in unspecified loss allocations	92	-16	35	0
+ Other adjustments	-27	9	-2	12
- Recoveries of loans previously written off	-456	-493	-77	-79
= Loan losses	3367	4744	1247	281

Source: Norges Bank

Table 3.2 Return on equity in Nordic banking groups. Per cent

	2002	2003	2004 Q1
Svenska Handelsbanken	14.6	14.9	16.5
Danske Bank	14.0	15.2	15.9
Nordea Bank AB	7.5	12.3	13.9
Swedbank	11.0	15.9	16.9
SEB	12.0	12.3	14.0
DnB NOR	8.9	12.7	14.1
Nordea Bank Norway	5.8	3.0	12.0
Fokus Bank	11.2	6.9	6.5
Sp.b. 1 SR-Bank	-1.3	15.2	16.1
Sp.b. 1 Nord-Norge	2.8	9.0	16.3
Sp.b. 1 Midt-Norge	0.4	10.2	15.0
Sparebanken Vest	3.1	11.8	13.7

Source: The banks' annual and quarterly reports

Types of risk

Credit risk: the risk of losses due to the inability of a counterparty to meet his obligations. In connection with a loan, credit risk is the risk of the borrower failing to fulfil the conditions of the loan covenant.

Market risk: the risk of losses due to changes in interest rates, exchange rates or share prices.

Liquidity risk: the risk of substantial extra expenses due to the inability of a counterparty to fulfil his obligations at the right time.

Table 3.3 Balance sheet structure in Norwegian banks¹⁾.

Percentage distribution	2002 Q1	2003 Q1	2004 Q1
Cash and deposits	6.6	5.3	4.4
Securities (trading book)	8.3	8.3	8.9
Gross lending to households, municipalities and non-financial enterprises	72.3	72.6	73.5
Other lending	9.3	9.5	10.3
- Total loss allocations	-1.2	-1.5	-1.3
Other assets	4.7	5.8	4.2
Total assets	100.0	100.0	100.0
Customer deposits	48.9	48.8	47.7
Deposits/loans from domestic fin. inst.	3.7	3.8	4.0
Deposits/loans from foreign fin. inst.	11.1	9.0	9.3
Deposits/loans from Norges Bank	0.0	0.5	0.2
Other deposits/loans	2.2	2.3	2.4
Notes and short-term paper	4.6	5.2	4.4
Bond debt	16.0	16.1	18.6
Other liabilities	3.8	5.0	4.0
Subordinated loan capital	2.4	2.6	2.5
Equity	7.2	6.8	6.9
Total equity and liabilities	100.0	100.0	100.0
<i>Memorandum:</i>			
Total assets (NOK bn)	1 386.6	1 481.1	1 578.1

¹⁾ Excluding branches of foreign banks

Source: Norges Bank

Table 3.4 Banks' gross lending and mortgage-backed lending by sector. In NOK bn

	2002 Q1	2003 Q1	2004 Q1
Municipalities	6	4	3
Non-financial enterprises	375	380	372
Households	673	745	849
Total	1 054	1 129	1 223
<i>Of which: Mortgage-backed lending in per cent of gross lending</i>			
Municipalities	0.8	2.0	3.3
Non-financial enterprises	5.1	6.1	6.9
Households	80.7	81.7	83.4
Total	53.3	56.0	59.9

Source: Norges Bank

quarter of 2004 (see Table 3.4). In the same period, the share of lending to households increased from 66% to 69%. This means that developments in households' debt-servicing capacity and house price developments are of increased importance to banks' credit risk.

Banks have been willing to meet households' high demand for loans, possibly because they have considered the risk associated with mortgage-backed loans to be relatively low. Expectations of lower capital requirements for housing loans as a result of new capital requirements (Basel II) point the same way. Developments in banks' lending rates reflect this situation. Average interest rates on new mortgage-backed loans have dropped as much as Norges Bank's key rate (see Chart 3.5).¹⁰ Up to the present, the effect on the average interest rate on all mortgage-backed loans, both old and new, and with both fixed and floating rates, has been less. From the end of the third quarter of 2002 to the end of 2003 (most recent figures available), Norges Bank's interest rate statistics show that the average lending rate for mortgage-backed loans was reduced by 4.1 percentage points. The lack of impact on the average interest rate on all housing loans reflects the fact that a portion of the loans have fixed interest rates and that there is a time lag in the adjustment of interest rates on existing loans.

Housing loans with a high loan-to-asset-ratio involve a particular risk for banks. Kredittilsynet's most recent housing loan survey¹¹ shows that the proportion of loans (by value) with a loan-to-asset-ratio of over 80% has increased markedly (see Table 3.5).

Partly as a result of low interest rates, households' interest burden is low (see Section 2.2). The risk of higher losses on loans to households is therefore relatively limited in the short term. As a result of high debt growth, however, households are now more vulnerable to economic disturbances. A sharp rise in interest rates might represent a debt-servicing challenge to some households, and result in increased loan losses for banks that have not allowed for such a development.

Credit risk associated with loans to non-financial enterprises

As a result of low economic growth and reticence about investing in recent years, corporate demand for loans has been low. At the same time, banks have used the decline in interest rates to increase the pricing of risk, with the result that interest rates on loans to many companies have fallen less than Norges Bank's key rate and housing loan interest rates (see Chart 3.5). However, information from Norges Bank's regional network does not suggest that banks as a whole have become more restrictive in extending loans to the corporate sector.

¹⁰ The source is Cicero's lending indicator, which shows banks' average lending rate on new first-priority mortgages of NOK 500 000 with a payment period of 15 years, and within 80 per cent of market value. The indicator is a weighted average of the interest rates of 50 banks, which represent about 90 per cent of the banking sector, measured by total lending to retail customers.

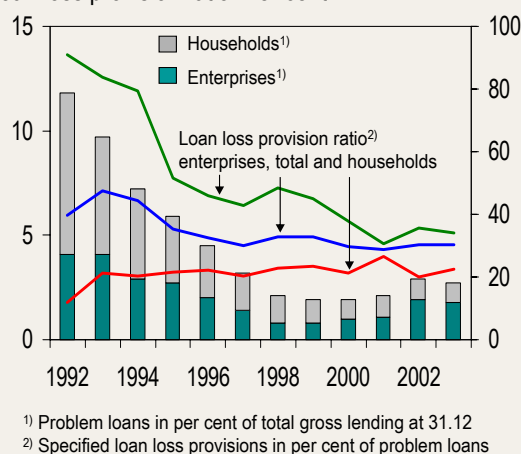
¹¹ Since 1994 Kredittilsynet has been carrying out surveys of banks' practice with respect to mortgage loans. In the most recent survey, 29 banks were asked to go through the first 100 mortgage-backed loans disbursed after 1 November 2003 (called the 2004 survey in Table 3.5). Previous surveys were carried out on date from 1 March onwards.

Loan loss provision rate and loan losses

Banks' loan losses are ultimately determined by two factors: the size of the loans that borrowers cannot service and the portion of these loans that is lost. The latter depends on banks' collateral and borrowers' future debt-servicing capability.

Banks' problem loans comprise defaulted and doubtful loans. Defaulted loans are loans that have not been serviced within 90 days after the due date. Doubtful loans are loans where no formal default has occurred, but where the banks expect to incur losses. The number of problem loans fell after the banking crisis at the beginning of the 1990s, increased somewhat again in 2002 and was slightly reduced in 2003 (see Chart 1). Specified loan loss provisions are calculated losses on problem loans. In recent years, total calculated losses have accounted for approximately 30 per cent of problem loans, compared with just below 50 per cent in 1993.¹

Chart 1 Problem loans (left-hand scale) and banks' loan loss provision ratio. Per cent



¹ Problem loans in per cent of total gross lending at 31.12
² Specified loan loss provisions in per cent of problem loans

Source: Norges Bank

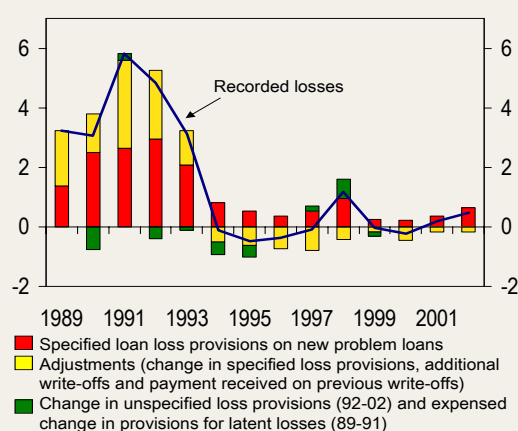
Loan loss provisions are on average higher for enterprises than for households. The loan loss provision rate for enterprises was 34 per cent at end-2003, compared with about 90 per cent in 1992 during the banking crisis. For the household sector, the loan loss provision rate has remained relatively stable at around 20 per cent.

For enterprises in particular, it is reasonable to expect a positive relationship between the extent of problem loans and banks' loan loss provision rate. Real estate is often used as loan collateral. Loan default figures are usually high during a downturn. Prices for commercial and residential property will then often fall, resulting in a decline in the value of banks' collateral.

While loan loss provisions express what banks at any given time expect to lose on problem loans, losses in banks' profit and loss accounts (recorded losses) express the amount to be charged against the accounts for the period. Recorded losses are mainly determined by loan loss provisions for new problem loans and corrections of loss estimates for previous periods. While losses on new problem loans will always have a positive value, reassessments of previous loss estimates can be both positive and negative. A downward revision of loss estimates on some loans will be regarded in the accounts as income.

Recorded losses for the DnB Group for the years 1989-2003 show the effects of changes in loss estimates (see Chart 2). Losses were highest in the banking crisis years, reaching a peak in 1991, while losses on new problem loans were highest in 1992. Reassessment of loss estimates contributed to increasing recorded losses in the years 1990-1993, but contributed to reducing loan losses in the subsequent period.

Chart 2 Recorded losses in DnB¹. Group figures. In billions of NOK



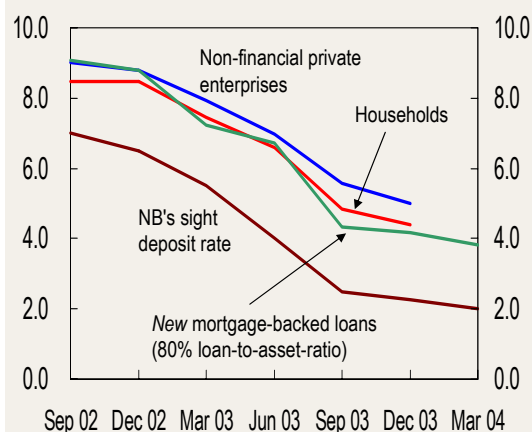
¹ Losses for 1989 are taken from DnB's annual report for 1990 and include DnC and Bergen Bank

Source: DnB's accounts

Bank losses will increase most sharply if new problem loans and the loan loss provision rate both increase. There is currently a relatively low level of problem loans and the effect on total bank losses of an increase in the loan loss provision rate for these loans will therefore be limited.

¹ Unspecified loss provisions were first introduced in the accounting year 1992. Figures for 1992 may be influenced by bank practice in connection with the introduction of the new rules. Practice probably varied more from one bank to another in the first half of the 1990s than today.

Chart 3.5 Development in banks' lending rates and Norges Bank's sight deposit rate. Per cent



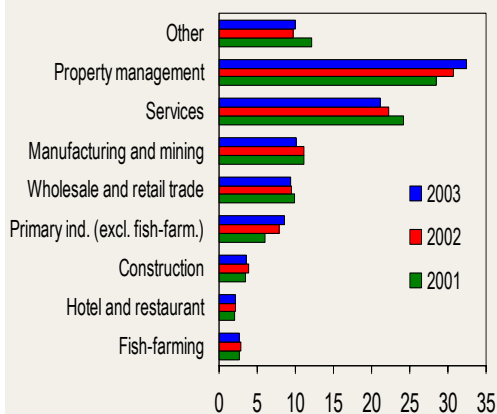
Sources: Norges Bank and Cicero

Table 3.5 Housing loans to households by loan-to-asset value ratio (shares according to value). Per cent

	2002	2003	2004
Up to 60%	38.1	40.9	28.7
60-80%	29.4	29.0	30.4
80-100%	21.9	20.5	27.5
Over 100%	10.5	9.5	13.3

Source: Kredittilsynet

Chart 3.6 Percentage distribution of commercial loans¹⁾. All banks



¹⁾ Commercial loans comprise both lending to non-financial enterprises and households which are self-employed

Source: Norges Bank

Loans to non-financial enterprises accounted for 30 per cent of banks' gross lending to households, municipalities and non-financial enterprises at the end of the first quarter of 2004 (see Table 3.4). Non-performing loans and losses on loans to the corporate sector increased sharply in 2002, and were high in the first half of 2003 (see Chart 3.4).

Banks have greatest exposure to the property management industry. Loans to this sector amounted to 32 per cent of corporate loans at end-2003 (see Chart 3.6). This share has increased in recent years, in spite of weak developments in parts of the property market (see Section 2.3). Recorded losses on loans to the property industry have not been higher than losses to other industries in recent years, however, and they dropped appreciably in 2003 (see Chart 3.7 and Table 4 in Annex 1).

The loss picture for other industries was mixed in 2003. Losses on loans to the service sector dropped markedly from 2002 to 2003, while losses in construction increased appreciably. Losses on loans to fish-farming and fisheries increased further in 2003, primarily in the first half of the year. Loans to this industry accounted for just under 3% of banks' corporate sector loans at end-2003. The potential for new substantial losses is therefore limited.

Banks' capacity to absorb losses

Banks' capacity to absorb loan losses depends on their results and capital adequacy. We have assessed the capacity of the seven largest banking groups to sustain losses by measuring how large the losses would have to be over a 3-year period before their capital base fell below the minimum requirement. The accounts for 2003 form the starting point, and it is assumed that banks do not raise new equity or supplementary capital, that the size and composition of the balance sheet do not change, and that the banks do not pay a dividend. In the first example, it is assumed that banks have the same results as in 2003 in each of the three subsequent years. In the second example, a result before losses of zero is assumed for these three years.

With the same result before losses as in 2003, the soundest of the seven largest banking groups¹² will sustain an average loss per annum over three years of 3.1% of gross lending (see Chart 3.8). If the pre-tax profit is zero in the three years, this group will sustain an average loss of 1.4 per cent of gross lending. The weakest bank will sustain average losses over three years of 1.7% and 0.8% of gross lending, respectively, given these two assumptions concerning results. The capacity to sustain losses, given a profit of zero before losses, fell on average from 2002 to 2003 (see Chart 3.8). This is because the banking groups' Tier 2 capital ratio fell somewhat in 2003. On the other hand, somewhat better results before losses in 2003 than in 2002 contributed to an improvement in banks' capacity to absorb losses, given the assumption that their results for the next three years are the same as in 2003.

¹² DnB and Gjensidige NOR are combined here, and the group's preliminary accounts are used as the starting point.

Banks' loan losses – baseline scenario and stress tests

Banks' loss absorption capacity must be assessed against different scenarios for banks' overall loan losses in the future. The baseline scenario for loan losses is based on the baseline scenario for economic developments in *Inflation Report 1/2004*.¹³ In this scenario, loan losses decline somewhat in 2004, and increase to about 0.5% of gross lending in 2006, partly as a result of increased interest rates (see Chart 3.9). The largest banking groups will have no problem in handling such a loss level.

In order to assess the risk of Norwegian banks' experiencing solvency problems, we have also considered the capacity to absorb losses in relation to the size of the loan losses in two scenarios where there is a marked deterioration in borrowers' debt-servicing capacity. In these stress tests, we consider the effects of the following exogenous changes compared with the scenario in *Inflation Report 1/2004*:

- Three-month money-market rates rise gradually to 7.2%¹⁴ and 10%, respectively, towards the end of 2005, and remain at these levels in 2006.
- House prices remain approximately unchanged in 2004, but fall by 7% and 10%, respectively, in each of the two following years.

A very sharp fall in oil prices, a serious loss of confidence in the Norwegian economy and a marked increase in interest rates in other countries are examples of disturbances which in combination could trigger such scenarios. The stress tests have been applied to the next few years, for technical reasons. The purpose is to analyse the vulnerability of banks when the Norwegian economy and vulnerability of banks' borrowers are similar to the current situation.

In the stress tests, growth in the Norwegian economy will decline sharply and unemployment will increase. Given our simplifying assumptions, the interest rate level will not be reduced in response to this negative trend. The interest burden of both household and corporate sectors will increase appreciably. A fall in house and commercial property prices will reduce banks' mortgage values, causing a rise in loss given default.

In the first scenario, loan losses will increase gradually to 1.5% of gross lending in 2006 (see Chart 3.9). The second scenario implies a sharper deterioration in the Norwegian economy and the value of collateral furnished, with the result that loan losses will increase to 2.4% of gross lending in 2006. It takes time before weak economic growth and weakened debt-servicing capacity translate into increased losses. Banks' loan losses will therefore probably be high also after 2006, even if new negative disturbances do not occur.

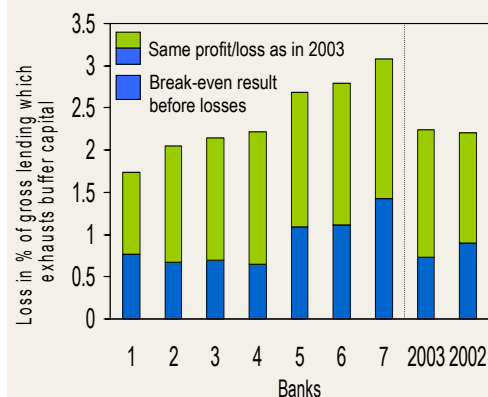
Chart 3.7 Recorded losses (excl. changes in unspecified losses) as a percentage of lending to different industry sectors.¹⁾ All banks



¹⁾ Commercial loans comprise both lending to non-financial enterprises and households which are self-employed

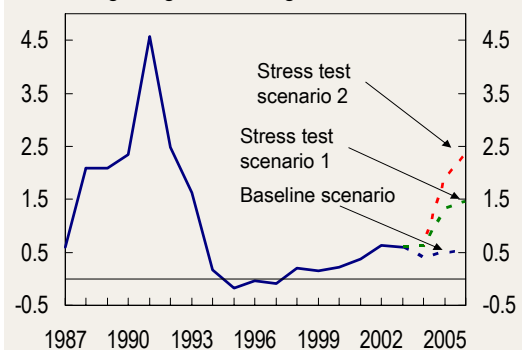
Source: Norges Bank

Chart 3.8 The 7 largest bank conglomerates' capacity to absorb losses with a break-even result before losses and same result as in 2003. Average for these conglomerates in 2003 and 2002. Losses over 3 years



Sources: Banks' annual accounts and Norges Bank

Chart 3.9 Developments in banks' losses on lending to households and non-financial enterprises. Baseline scenario and stress test scenario¹⁾. Percentage of gross lending



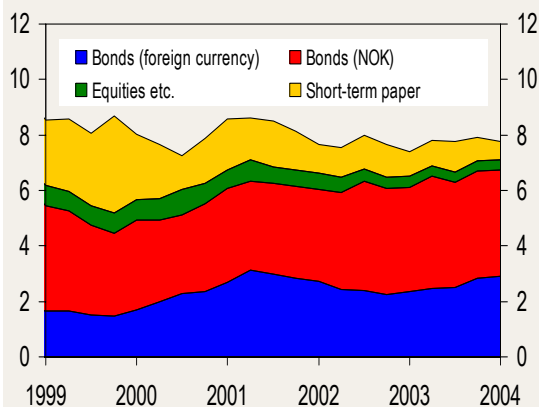
¹⁾ Based on the assumptions in the baseline scenario from *Inflation Report 1/2004*

Source: Norges Bank

¹³ The method for estimating banks' loan losses is described in Frøyland and Larsen: "How vulnerable are financial institutions to macro-economic changes? An analysis based on stress tests", *Economic Bulletin* 3/2002.

¹⁴ The interest rate level in the third quarter of 2002, before the period of interest rate cuts began.

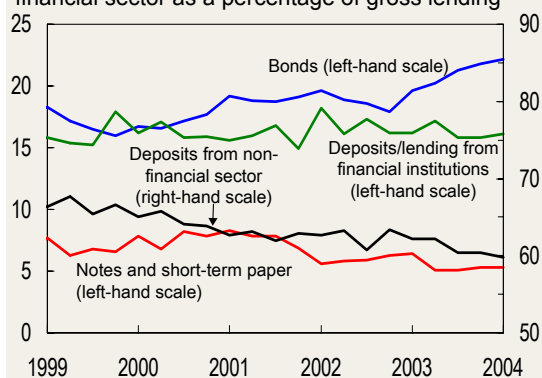
Chart 3.10 Banks¹⁾ trading book by item.
Percentage of total assets



¹⁾ Excluding branches of foreign banks

Source: Norges Bank

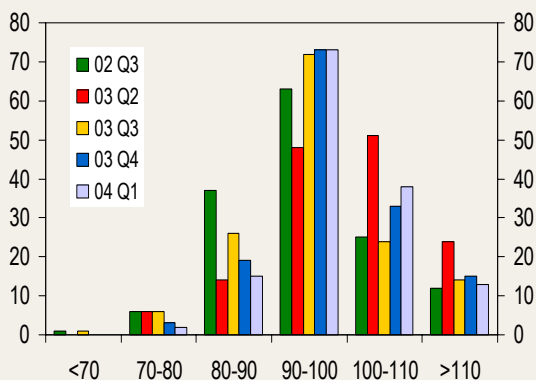
Chart 3.11 Banks¹⁾ financing in the form of bonds, notes and short-term paper, deposits/loans from financial institutions and deposits from the non-financial sector as a percentage of gross lending



¹⁾ Excluding branches of foreign banks

Source: Norges Bank

Chart 3.12 Number of banks¹⁾ by level of liquidity indicator²⁾



¹⁾ Excluding branches of foreign banks

²⁾ Stable financing (customer deposits, equity and bonds) as a percentage of illiquid assets (lending and other long-term assets)

Source: Norges Bank

With a macroeconomic deterioration such as the first scenario, the 4 banking groups in the weakest financial position would experience problems in satisfying the minimum capital requirement, assuming a profit of zero before losses for 3 years. In the second scenario, and assuming a profit of zero before losses, all 7 banking groups would probably fall below the minimum requirement. With the same profit before losses as in 2003, all the banking groups would satisfy the minimum requirement regarding capital in both scenarios. The result before losses would probably be somewhere between the two scenarios. A pronounced economic deterioration will often lead to weak developments in securities markets, and a high share of non-performing loans will mean lower interest recorded on lending. Under such circumstances, it may also be a challenge to raise new equity or supplementary capital.

Market risk

Banks engage to only a limited extent in securities trading for their own account. They primarily hold interest-bearing securities, because most of them can be used as collateral for intraday loans and fixed-deposit loans from Norges Bank (see Chart 3.10). The low share of securities classified as current assets therefore contributes to low market risk in Norwegian banks, measured at parent bank level. The most important source of market risk for Norwegian banks is connected with ownership of life insurance companies.

Liquidity risk

The low interest rate level has contributed to making bank saving less attractive than other kinds of saving. Deposit growth has therefore been low, and deposits from the non-financial sector have continued to fall, as a percentage of lending, since autumn 2002 (see Chart 3.11). The increased difference between lending and deposits has been financed primarily with bonds. Since both customer deposits and bonds can normally be regarded as stable financing, this shift has not affected liquidity risk in banks, viewed as a whole, to any particular degree.

However, there are considerable differences between banks. From autumn 2002 and through the first half of 2003, many small banks had problems in securing financing on conditions that ensured satisfactory profitability. This is because banks' creditors have increased their risk and liquidity premiums. A number of banks have reduced their lending growth sharply in order to adapt to this situation. The number of banks with a high liquidity indicator¹⁵ value therefore increased sharply in the first half of 2003 (see Chart 3.12). This applied on average to commercial banks excluding Nordea Bank Norway and Fokus Bank (see Chart 3.13), but also to a number of small savings banks. Funding problems have continued for a number of these banks through the second half of 2003 and up to the present. For many small and medium-sized banks, high lending growth and low deposit growth led to reduced liquidity indicator values from

¹⁵ An indicator value of 100 means that the banks have balanced the illiquid assets with stable financial sources. An increase in the ratio indicates reduced liquidity risk. Account is not taken of any drawing-right facilities the banks might have at other banks.

the second to the third quarter of 2003. After this, the volume of bond financing increased, so that a number of these banks again recorded a liquidity indicator value of over 100. DnB and Gjensidige NOR, which have been combined in Chart 3.13 for the whole period, have had an average indicator value of over 100 for several years.

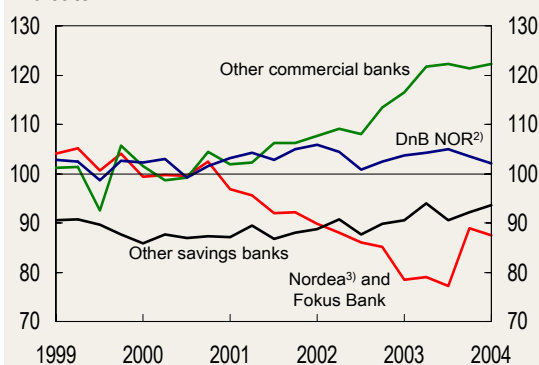
Because of the increased difference between lending volume and deposits, it has been a challenge for small and medium-sized Norwegian banks to secure long-term funding in the capital markets. This situation has been exacerbated by the decline in interest rates. A number of these banks do not have a rating from international credit rating agencies. This makes it expensive to obtain financing in the international capital markets. Nor do large international financial institutions consider it profitable to assess the creditworthiness of and extend relatively small loans to Norwegian banks. When the German Landesbanks lose their government guarantees on new loans (from 2005), another important source of funding for Norwegian banks may become more expensive. However, there are signs that Nordic banks have increased their activity in relation to small Norwegian banks.

With the exception of DnB NOR, Norwegian banks have lower ratings than the largest Nordic banks (see Table 3.6). This is partly due to difference in bank size. Moody's upgraded Sparebank 1 SR-Bank in November 2003, and both Danske Bank and Fokus Bank in April this year. Handelsbanken and SEB were upgraded by Moody's earlier this year.

Foreign-owned subsidiaries such as Fokus Bank and Nordea Bank Norway have access to financing via their respective parent banks, Danske Bank and Nordea Bank AB. This type of financing has increased substantially in recent years (see Chart 3.14).

In order to remedy structural financing problems and meet competition from large Norwegian and Nordic banks, small banks in the Terra Group have planned to establish a mortgage company as soon as the regulations for asset-backed bonds¹⁶ are in place. The company will mainly take over housing loans that are within 60 per cent of market value from banks. In this way the individual bank will release capital and reduce the need for relatively expensive financing from the money and capital markets. The newly established Credit Association for Savings Banks (KfS) will have a somewhat different purpose. By taking up large bond loans in Norwegian and international capital markets, KfS is to be able to mediate long-term loans to small and medium-sized savings banks at more favourable conditions than they could have achieved themselves. In this case, banks' lending will remain on their balance sheets.

Chart 3.13 Developments in banks⁽¹⁾ liquidity indicator



¹⁾ Excluding branches of foreign banks
²⁾ Postbanken and Nordlandsbanken included
³⁾ The increase in 2003 Q4 is due to changes in Nordea's accounts reporting. The indicator for Nordea is more comparable with that of other banks after the change
 Source: Norges Bank

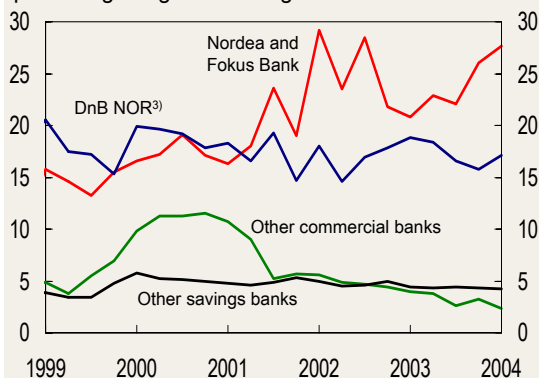
Table 3.6 Moody's rating⁽¹⁾ for Nordic banking groups as at 2004 Q1

	Financial strength	Short-term	Long-term
Svenska Handelsbanken	A-	P1	Aa1
Danske Bank	A-	P1	Aa1
Nordea Bank AB	B	P1	Aa3
Swedbank	B	P1	Aa3
SEB	B	P1	Aa3
DnB NOR	B	P1	Aa3
Nordea Bank Norway	B-	P1	Aa3
Fokus Bank	C	P1	Aa2
Sp.b. 1 SR-Bank	C+	P1	A2
Sp.b. 1 Nord-Norge	C	P2	A3
Sp.b. 1 Midt-Norge	C	P2	A3
Sparebanken Vest	C	P2	A3

¹⁾ Rating scale for financial strength: A+, A, A-, B+, B, B-, C+, C, C-,...
 Short-term: P1, P2,... Long-term: Aaa, Aa1, Aa2, Aa3, A1, A2,...

Sources: Moody's and banks' websites

Chart 3.14 Banks⁽¹⁾ short-term foreign debt⁽²⁾ as a percentage of gross lending



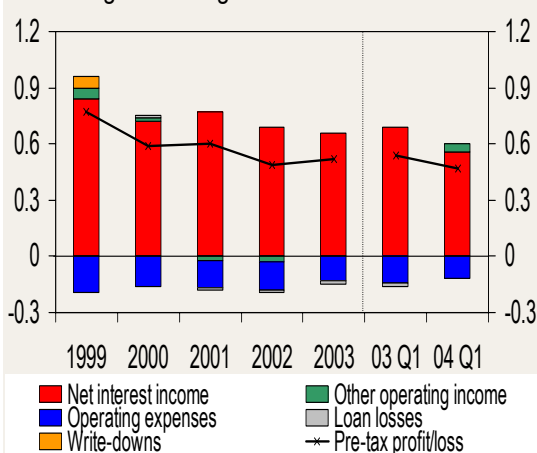
¹⁾ Excluding branches of foreign banks
²⁾ Deposits and loans from other financial institutions and notes and short-term paper
³⁾ Postbanken and Nordlandsbanken included
 Source: Norges Bank

¹⁶ With asset-backed securities, the owners of the securities are given a lien in part of the credit institution's assets. Such a lien in isolation suggests that investors will demand a lower credit risk premium when buying bonds. Other financial institutions, especially insurance companies, will probably become important investors. If investing in such bonds reduces capital adequacy requirements and the possibilities of investing in these bonds are improved through higher limits for large lending exposures, demand for asset-back securities will be stimulated. This will mean lower financing costs for mortgage companies.

Table 3.7 Balance sheet structure in mortgage companies.

Percentage distribution	2002 Q1	2003 Q1	2004 Q1
Cash and deposits	2.0	1.5	1.0
Securities (trading book)	20.6	18.6	18.7
Gross lending:			
Repayment loans	77.9	78.1	78.3
- Loan loss provisions	-0.2	-0.1	-0.1
Other assets	-0.3	2.0	2.1
Total assets	100.0	100.0	100.0
Notes and short-term paper	12.4	11.6	9.7
Bond debt	53.4	52.6	52.1
Loans	26.0	28.5	31.8
Other liabilities	1.5	1.8	1.6
Subordinated loan capital	2.2	1.3	1.2
Equity	4.6	4.2	3.7
Total equity and liabilities	100.0	100.0	100.0
<i>Memorandum:</i>			
Total assets (NOK bn)	255.6	290.7	339.3

Source: Norges Bank

Chart 3.15 Mortgage companies' profit/loss. Percentage of average total assets

Source: Norges Bank

Table 3.8 Balance sheet structure in finance companies.

Percentage distribution	2002 Q1	2003 Q1	2004 Q1
Cash and deposits	2.2	1.8	2.3
Securities (trading book)	0.2	0.2	0.2
Gross lending:			
Discount credit, bank overdraft facility, operating credit, user credit	20.1	21.9	21.2
Other building loans	0.1	0.1	0.1
Repayment loans	32.3	33.5	35.0
Loan financing	43.6	41.2	39.9
- Loan loss provisions	-1.8	-1.9	-1.9
Other assets	3.3	3.2	3.4
Total assets	100.0	100.0	100.0
Notes and short-term paper	0.6	0.0	0.0
Bond debt	0.1	0.5	0.5
Loans	83.3	84.5	83.9
Other liabilities	6.9	5.7	6.1
Subordinated loan capital	1.0	1.1	1.0
Equity	8.1	8.2	8.5
Total equity and liabilities	100.0	100.0	100.0
<i>Memorandum:</i>			
Total assets (NOK bn)	90.1	93.2	103.3

Source: Norges Bank

Overall, the liquidity risk for banks is regarded as relatively low and roughly unchanged since *Financial Stability 2/2003*. With the current low interest rate level, the deposit-to-loan ratio will probably continue to edge down in most banks. Securing long-term financing will be a challenge for small and medium-sized Norwegian-owned banks. The establishment of a mortgage company and KfS may help to reduce or curb liquidity risk for savings banks. The introduction of rules and regulations concerning asset-backed bonds will probably lead to other banks' rapidly establishing and transferring housing loans to mortgage companies. This would contribute to a reduction of liquidity risk.

Overall assessment of the risk outlook for banks

The low interest rate level and increased economic growth have contributed to strengthening the debt-servicing capacity of borrowers. In the short term, banks' credit risk associated with households is relatively low, and somewhat reduced since *Financial Stability 2/2003*. Credit risk associated with loans to the corporate sector varies from one industry to the next, but on the whole it is moderate and somewhat lower than in *Financial Stability 2/2003*. Banks' market and liquidity risk is assessed as being approximately unchanged compared with six months ago. Banks' risk picture is therefore somewhat improved in the short term. At the same time, the sharp rise in debt has made households more vulnerable to economic disturbances. A sudden debt consolidation among households would reduce the earnings and debt-servicing capacity of many enterprises. Households' high debt growth may therefore be paving the way for higher loan losses in the longer term. Greater household vulnerability is thus an uncertainty factor for developments in the economy and in banks.

3.3 Other financial institutions

Norwegian banks have entered into alliances or become part of financial conglomerates that also include other financial institutions (see Tables 5 and 6 in Annex 1). Developments in other financial institutions may therefore have an impact on the banks. Developments in mortgage companies, finance companies and life insurance companies are assessed below. For many banking groups, the most important developments outside banking are taking place in the life insurance sector.

Mortgage companies

Mortgage companies provide long-term mortgage loans to enterprises, municipalities and to some extent to individuals. Many mortgage companies have specialised in providing loans to commercial property companies. Fokus Kreditt has gained an increasingly prominent role as mortgage provider in the Fokus group. Many mortgage companies are to a large extent financed through loans from their owners, and the share of this type of financing has increased markedly in recent years (see Table 3.7). On the other hand, the share of bond funding has declined.

For the last twelve months to the end of the first quarter of 2004, mortgage companies' lending growth was 16%. Profits, net interest income and other operating income for mortgage companies remained approximately unchanged from 2002 to 2003 measured as a percentage of ATA (see Chart 3.15). The low interest rate level, however, contributed to a decline in net interest income in the first quarter of 2004 compared with the same quarter of 2003. Recorded loan losses have been very low for a number of years. As a result of strong lending growth, the Tier 1 capital ratio fell from 10.2% to 9.4% from the first quarter of 2003 to the first quarter of 2004.

Finance companies

Finance companies offer short-term loans, factoring and leasing for many different purposes (see Table 3.8). Finance companies are, to a greater extent than mortgage companies, part of financial groups that include banks, but they account for a small portion of these groups' total assets. Finance companies' owners are also their most important source of funding. Over the last twelve months to the end of the first quarter of 2004, finance companies' lending growth was 7%.

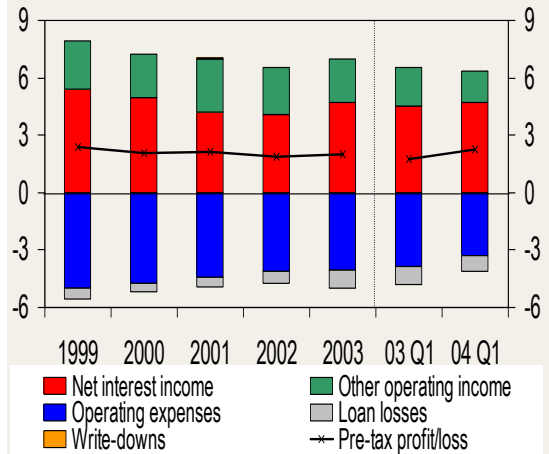
Finance companies' profits rose from the first quarter of 2003 to the first quarter of 2004 due to increased interest margins and net interest income (see Chart 3.16). This probably reflects less intense price competition in markets in which finance companies operate than in the mortgage market. Recorded loan losses remained approximately unchanged at 0.9% of ATA. The Tier 1 capital ratio increased from 8.9% to 9.2% from the first quarter of 2003 to the first quarter of 2004.

Life insurance companies

Life insurance companies' pre-tax profits before payments to customers improved from 1.2% to 2.5% of ATA from the first quarter of 2003 to the first quarter of 2004. Value-adjusted profits, including changes in the adjustment fund, increased from 1.3% to 4.9% of ATA. The improvement is mainly due to positive developments in both the equity and fixed income markets. Both equity and bond prices have fallen so far in the second quarter of 2004.

Because of earlier reductions in buffer capital, life insurance companies reduced the risk associated with their assets through 2001 and 2002. The equity portfolio was reduced and bonds were redefined from the trade portfolio to investments that are held to maturity. Such bonds are assessed at face value, and their value does not fluctuate in pace with interest rates. Partly due to the rise in equity markets since spring 2003, life insurance companies increased the share of equities and reduced the share of bonds and short-term paper in the trade portfolio up to the first quarter of 2004 (see Table 3.9). The portion of bonds held to maturity has increased further. Life insurance companies' buffer capital improved from 3.4% to 5.7% of total assets from the first quarter of 2003 to the first quarter of 2004.

Chart 3.16 Finance companies' profit/loss. Percentage of average total assets



Source: Norges Bank

Table 3.9 Balance sheet structure in life insurance companies.¹⁾ Selected assets as percentages of total assets

	2003 Q1	2004 Q1
Buildings and real property	10.3	9.3
Investment in permanent ownership etc.	39.7	41.5
- of which equities and units	0.2	0.5
- of which bonds held until maturity	33.6	36.6
- of which lending	5.7	4.4
Other financial assets	44.8	45.0
- of which equities and units	7.2	13.5
- of which bonds	24.6	23.3
- of which short-term paper	10.5	5.8
<i>Memorandum:</i>		
Total assets (NOK bn)	423.2	475.4

¹⁾ Excluding companies offering unit-linked products

Source: Kredittilsynet

A more robust securities settlement system

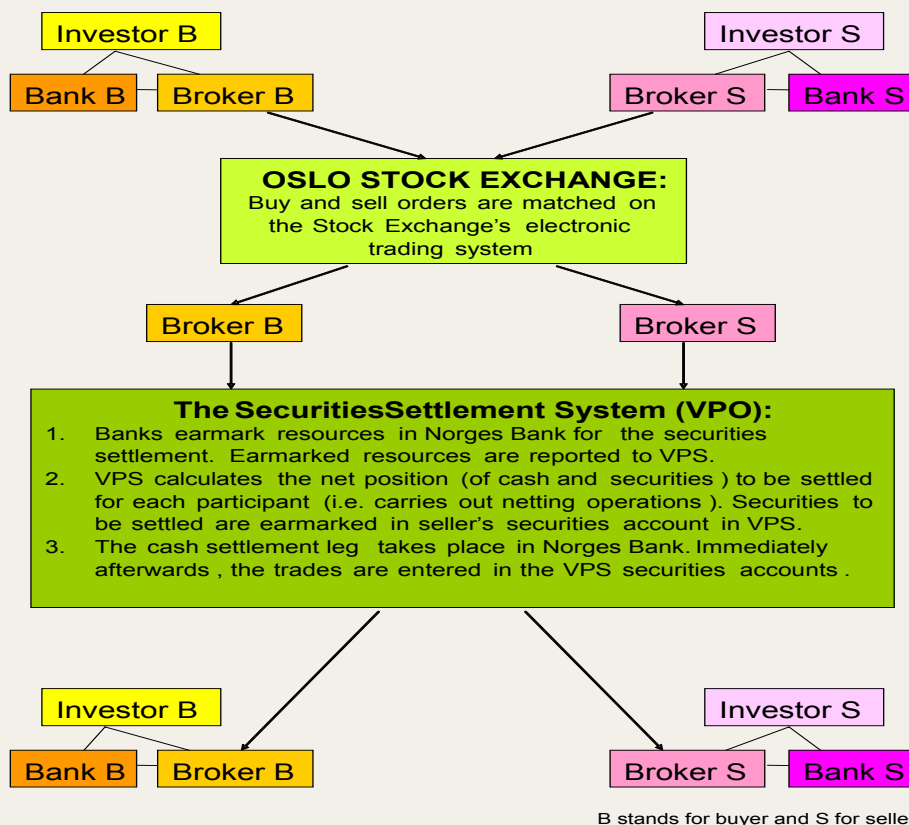
Securities settlement is a system to settle amounts outstanding, in the form of securities or cash, in a securities transaction. This system is regarded as an independent payment system. The central banks of the Group of Ten countries have published guidelines for assessing when a payment system should be considered systemically important.¹ The main focus is on volume. The cash leg of security transactions is, however, typically regarded as systemically important even when volumes are moderate. One important reason for this is that an unpredictable and inefficient securities settlement system can undermine participants' confidence in the securities market. A number of international recommendations for securities settlement have been drawn up to ensure efficiency and financial stability.² The new Act relating to the Norwegian Securities Depository, which entered into force on 1 January 2003, has brought the Norwegian system more into line with international recommendations. The Norwegian Central Securities Depository (VPS) and Norges Bank have followed up the Act and cooperated on modernising their systems.

In Norway, a joint settlement system is used for equity instruments, bonds and short-term paper, referred to as the securities settlement system

(VPO). In addition to Norges Bank, 17 banks and 22 brokers currently participate directly in the VPO. The process from an investor's decision to trade securities through to final settlement of the trade is called the securities chain. The chart illustrates a trade initiated by a broker on the Oslo Stock Exchange between a buyer (B) and a seller (S), with both the securities and the cash leg of the transaction settled in the VPO.³ Investors who wish to trade securities on the Oslo Stock Exchange must have an account with a broker and a bank, as indicated at the top of the diagram. A securities transaction is initiated when a broker places a trade order on the Oslo Stock Exchange, either for own account or on behalf of an investor. After the trade has been concluded on the Stock Exchange, the buying and selling brokers must report the trade for settlement in the VPO.

To simplify, we have presented the VPO process in the chart in three stages. In the first stage, banks must earmark funds prior to each settlement. The brokers' financial positions in the VPO are settled over the banks' accounts in Norges Bank on the basis of agreements between bank and broker. The next stage in the process is that the VPS clears each participant's position in the settlement. Amounts

The securities chain in Norway



outstanding between participants are offset, so that a net position for each security and a net position in NOK are calculated for each participant. Total net cash positions in the VPO averaged around NOK 5bn per day in the first quarter of 2004. Total stock market turnover of equity instruments, bonds and short-term paper averaged more than NOK 20bn per day in the same period. In the final stage of the VPO process, the cash positions are settled in Norges Bank and the VPS enters the transactions in the securities accounts. After the securities settlement is completed, a cash settlement is made between investors, brokers and banks, as shown at the bottom of the chart.⁴

Under earlier legislation, changes in securities accounts in the VPS were made only once a day. Settlement was therefore only executed once a day (every morning). Under the new Act, rights in the VPS are legally binding as soon as registration is completed. This makes it possible to execute several settlements in the course of the day. The VPS and Norges Bank decided to introduce two settlements a day (early and late morning). Previously, net positions for the following day's settlement were calculated by the VPS even though it had no information about participants' financial cover. There was therefore a possibility that the settlement would not be approved in Norges Bank's balance check the next morning. Even though Norges Bank never had to reject a settlement, delays while brokers obtained more liquidity were not unusual. The delays created uncertainty as to *whether* and *when* the settlement would be executed. This problem has now been solved by requiring banks to earmark funds for this purpose. Transactions with inadequate cover are postponed to the next settlement. Thus, settlements are now executed at fixed times of the day. The VPO has thus become more predictable and more in line with international recommendations in this area.

The principle of protecting participants against credit risk by only releasing payment if the securities have been delivered and vice versa is continued in the modernised VPO. All securities trading entails a certain degree of market and liquidity risk, however, depending on whether the seller can deliver securities and the buyer can produce payment on the agreed settlement day. The standard settlement day within the industry is three days after the trading day. The portion of trades that are settled on the agreed day in the VPO has increased from around 80% at the end of the 1990s to the current level of 97%. Today, trades for which cover is lacking in

the early morning will be postponed until the late morning settlement, providing another opportunity for settlement on the agreed day. The introduction of a late morning settlement has made it possible to choose settlement on the trading day. One advantage of this is that investors' exposure to market and liquidity risk is more short-term than in a standard settlement. A disadvantage is that brokers have little time to raise cover for the settlement. Nevertheless, participants in the VPO now have a wider range of choices, and this contributes to increased settlement efficiency.

A securities lending scheme has been linked to the VPO since 1999. The purpose of the scheme is to allow participants that lack securities cover for a settlement to borrow securities so that trades can be settled on the agreed day. So far, only foreign lenders have participated in this scheme. This is because securities lending by Norwegian market participants is taxed in the same way as realisation, making securities lending unattractive. These tax rules were amended with effect from 1 January 2004, providing scope for increased liquidity in the lending scheme.⁵

The new Act relating to the Norwegian Securities Depository provided the basis for a modernisation of the collateralisation system in the VPS. Two-thirds of the securities used by banks as collateral for loans in Norges Bank are collateralised in the VPS. This collateral may now be changed through the day with immediate legal effect. This provides greater flexibility for banks' borrowing from Norges Bank and reduces the risk of liquidity shortages for the banks.

All in all, the above measures have brought the Norwegian system more into line with international recommendations in terms of both predictability and efficiency.

¹ BIS (2001): "Core Principles for Systemically Important Payment Systems", Committee on Payment and Settlement Systems (CPSS).

² See in particular BIS/IOSCO (2001): "Recommendations for securities settlement systems", CPSS/Technical Committee of the International Organization of Securities Commissions (IOSCO).

³ The chart also illustrates settlement in the primary market, although in this case the transaction is between the issuer and the investor.

⁴ A more detailed account is given by Husevåg and Bjerkeland: "Securities settlement in Norway - How will developments in Europe affect the Norwegian system?", *Economic Bulletin* 4/2003.

⁵ Proposition no. 42 (2002-2003) to the Odelsting: *Om lov om endringer i skatteloven mv* (Concerning amendments to the Taxation Act etc), Ministry of Finance.

Annex 1: Statistics

Table 1 Structure of the Norwegian financial industry. As at 31 December 2003

	Number	Lending (NOK bn)	Total assets (NOK bn)	Core capital ratio (%)	Capital adequacy (%)
Banks (excl. foreign subsidiaries in Norway)	143	1136.9	1539.5	9.7	12.4
Branches of foreign banks	8	59.9	184.1		
Mortgage companies	11	210.5	321.1	9.6	12.2
Finance companies	50	90.5	97.4	9.4	10.9
Life insurance companies	13	20.6	480.3	10.1	15.0
Non-life insurance companies	46	1.3	106.7		
<i>Memorandum:</i>					
Market value of equities, Oslo Stock Exchange			689.7		
Outstanding domestic bonds and short-term paper debt			662.0		
Issued by public sector and state-owned companies			322.5		
Issued by banks			199.2		
Issued by other financial institutions			72.2		
Issued by other private enterprises			46.9		
Issued by non-residents			21.3		
GDP Norway, 2003			1570.3		
GDP Mainland Norway, 2003			1247.3		

Sources: Norges Bank, Oslo Stock Exchange and Statistics Norway

Table 2 Results in Norwegian banks¹⁾ in selected quarters²⁾

	2003 Q1		2003 Q2		2003 Q3		2003 Q4		2004 Q1	
	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA
Net interest income	7.89	1.96	8.10	1.95	8.22	1.94	7.62	1.76	7.63	1.74
Other operating income	2.63	0.65	3.50	0.84	3.24	0.76	5.32	1.23	3.78	0.86
commission income	1.82	0.45	1.90	0.46	2.16	0.51	2.32	0.54	2.25	0.51
securities, foreign exchange and deriv.	0.57	0.14	1.34	0.32	0.84	0.19	2.63	0.61	1.18	0.27
Other operating expenses	6.60	1.64	6.69	1.61	6.51	1.54	7.51	1.74	7.45	1.70
personnel expenses	3.56	0.89	3.56	0.86	3.50	0.83	3.91	0.91	3.70	0.84
Pre-tax operating profit	3.92	0.98	4.91	1.18	4.95	1.17	5.43	1.26	3.96	0.90
Losses on loans and guarantees	1.76	0.44	2.22	0.54	1.65	0.39	1.51	0.35	0.60	0.14
Pre-tax operating profit	2.14	0.53	2.86	0.69	3.25	0.77	4.13	0.96	4.59	1.04
Profit after taxes	1.60	0.40	2.38	0.57	2.44	0.58	3.32	0.77	3.98	0.90
Capital adequacy (%)	12.35		11.93		12.04		12.36		12.04	
Tier 1 capital ratio (%)	9.48		9.34		9.38		9.71		9.34	

¹⁾ All Norwegian commercial and savings banks and branches of foreign banks. Figures for capital adequacy and Tier 1 capital ratio are exclusive of foreign branches, which do not report this type of data

²⁾ Result figures as a percentage of ATA are annualised

³⁾ Preliminary figures

Source: Norges Bank

Table 3 Results in Norwegian banks¹⁾

	1999		2000		2001		2002		2003	
	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA
Net interest income	26.63	2.34	27.76	2.18	29.65	2.09	32.42	2.13	31.83	1.90
Other operating income	11.89	1.05	13.30	1.05	13.46	0.95	10.30	0.68	14.69	0.88
commission income	6.39	0.56	7.55	0.59	7.43	0.52	7.54	0.50	8.20	0.49
securities, foreign exchange and deriv.	4.52	0.40	4.75	0.37	3.85	0.27	1.46	0.10	5.38	0.32
Other operating expenses	23.70	2.08	24.82	1.95	26.32	1.86	26.92	1.77	27.31	1.63
personnel expenses	12.91	1.14	12.91	1.02	13.88	0.98	14.01	0.92	14.54	0.87
Operating result before losses	14.82	1.30	16.24	1.28	16.79	1.18	15.80	1.04	19.21	1.15
Losses on loans and guarantees	1.22	0.11	1.95	0.15	4.09	0.29	6.97	0.46	7.15	0.43
Pre-tax operating profit	14.27	1.26	16.90	1.33	12.62	0.89	8.96	0.59	12.38	0.74
Result after tax	11.68	1.03	13.20	1.04	11.33	0.80	6.11	0.40	9.74	0.58
Capital adequacy (%)	12.02		12.12		12.59		12.15		12.36	
Tier 1 capital ratio (%)	9.31		9.13		9.69		9.60		9.71	

¹⁾ All Norwegian commercial and savings banks and branches of foreign banks. Figures for capital adequacy and Tier 1 capital ratio are exclusive of foreign branches, which do not report this type of data

Source: Norges Bank

Table 4 Banks¹⁾ losses on loans²⁾ to various industries in sectors as percentages of lending to the respective industries and sectors

Industry / sector	1997	1998	1999	2000	2001	2002	2003
Agriculture, forestry, fishing	-0.06	0.19	0.29	0.26	0.21	2.73	6.11
Fish-farming, hatcheries	0.40	-0.14	1.25	0.12	0.16	8.05	22.59
Extraction of crude petroleum and natural gas	-1.29	-0.08	0.06	0.40	0.08	1.84	1.83
Manufacturing and mining	0.56	0.54	0.64	0.60	0.97	1.65	1.69
Electricity and water supply, construction	-0.13	0.15	0.41	0.69	0.21	0.46	1.64
Construction	-0.23	0.18	0.68	1.13	0.42	0.50	2.40
Retail trade, hotels and restaurants	0.13	0.26	0.56	0.61	0.80	0.90	0.95
Wholesaling and agency business	0.11	0.27	0.36	0.27	1.05	0.71	0.66
Retail trade	0.08	0.27	0.82	1.39	1.05	0.50	0.86
Hotels and restaurants	0.02	0.23	0.60	0.50	0.74	0.55	1.11
Shipping and pipeline transport	0.44	0.31	0.22	0.76	1.43	0.76	0.48
Shipping	0.48	0.26	0.19	0.26	0.18	0.68	0.39
Other transport and communications	-0.16	0.19	0.39	0.37	1.13	1.23	0.66
Commercial services and property management	-0.16	0.07	0.09	0.08	0.37	1.51	0.50
Property management	-0.15	0.04	0.08	0.02	0.12	0.68	0.23
Other service industries	-0.10	0.07	0.02	0.81	0.54	1.22	1.59
Total corporate sector	0.02	0.19	0.27	0.41	0.61	1.44	1.48
Household sector	-0.06	-0.01	-0.01	0.00	0.06	0.12	0.06
Others³⁾	0.04	0.67	0.02	0.21	0.30	0.26	0.15
Total lending	-0.02	0.16	0.11	0.19	0.31	0.63	0.57

¹⁾ Norwegian commercial and savings banks and branches of foreign banks in Norway. Not all foreign branches are included for all years. In 2001, the selection comprised all commercial banks and the 35 largest savings banks, and branches of foreign banks

²⁾ Recorded losses excl. changes in unspecified loss provisions

³⁾ Financial institutions, central government and national insurance administration, municipal sector and foreign sector

Source: Norges Bank

Table 5 Total assets in Norwegian financial conglomerates by line of business¹⁾ at 31 December 2003. Per cent

	Banks	Finance companies	Mortgage companies	Life insurance	Total conglomerate
DnB NOR	76.3	5.4	2.0	16.4	100.0
Nordea Norge	82.2	1.8	7.2	8.7	100.0
Sparebank 1 alliance	93.0	1.5	0.0	5.5	100.0
Storebrand	17.2	0.0	0.0	82.8	100.0
Terra alliance	99.7	0.3	0.0	0.0	100.0
Fokus Bank	67.7	0.0	32.3	0.0	100.0

¹⁾ 'Total conglomerate' is equivalent to the combined total assets in the various lines of business in the table.

The table does not show an exhaustive list of the activities of Norwegian financial conglomerates.

For example, unit-linked insurance, securities funds and asset management have been excluded

Source: Norges Bank

Table 6 Norwegian financial conglomerates' market shares¹⁾ in various lines of business at 31 December 2003. Per cent

	Banks	Finance companies	Mortgage companies	Life insurance	Total conglomerate
DnB NOR	40.7	50.8	5.7	32.7	35.3
Nordea Norge	13.9	5.5	6.5	5.5	11.2
Sparebank 1 alliance	11.4	3.3	0.0	2.5	8.1
Storebrand	1.4	0.0	0.0	25.9	5.5
Terra alliance	6.7	0.4	0.0	0.0	4.4
Fokus Bank	3.2	0.0	8.2	0.0	3.1
Total financial conglomerate	77.2	59.9	20.4	66.7	67.7

¹⁾ Market shares are based on total assets in the various lines of business. Total conglomerate corresponds to the combined total assets of the various lines of business in the table. The table does not show an exhaustive list of the activities in Norwegian financial conglomerates. For example, unit-linked insurance, securities funds and asset management have been excluded

Source: Norges Bank

Annex 2: Current research at Norges Bank on financial stability

Below are short summaries of articles dealing with financial stability issues written by researchers at Norges Bank and published in international professional journals with anonymous expert evaluations in 2003 and 2004. The conclusions and viewpoints presented in these articles are those of the authors and do not represent the views of Norges Bank.

Estimating switching costs: the case of banking

Authors: Moshe Kim (University of Haifa), Doron Kliger (University of Haifa) and Bent Vale (Norges Bank)
Publication: Journal of Financial Intermediation 12 (2003), pp. 25-56

We present an empirical model of bank behaviour when changing banks involves switching costs for borrowers. The model is applied to a panel of Norwegian banks for the period 1991 to 1993 to assess the switching costs. Switching costs comprise all kinds of costs for customers who switch banks, including the loss of advantages built up through a bank-customer relationship. The point estimate of the average switching cost for a borrower is 4.1% of the stock in question. This amounts to approximately one-third of the average lending rate in the estimation period. The estimate is statistically significant. More than a quarter of the added value to the bank of a customer relationship is attributed to the lock-in phenomenon generated by these switching costs. If one only considers switches between the largest banks, the estimate for switching costs is no longer statistically significant. Methodologically, a multiperiod model is used. This model contains customers' transition probabilities (probability of switching banks). The model derives estimable equations of banks' first-order conditions, market shares (demand) and cost equations. The novelty of the model is in its ability to extract information on both the magnitude and significance of switching costs from bank-specific aggregated data which do not contain customer-specific information.

Banks' buffer capital: how important is risk?

Author: Kjersti-Gro Lindquist (Norges Bank)
Publication: Journal of International Money and Finance 23 (2004), pp. 493-513

Most banks hold a capital to asset ratio well above the required minimum defined by the present capital adequacy regulation (Basel I). Using bank-level panel data from Norway, important hypotheses concerning the determination of this buffer capital are analyzed. Focus is on the importance of: (i) risk, (ii) the buffer as an insurance, (iii) the competition effect, (iv) supervisory discipline, and (v) economic growth. A negative or non-significant risk effect is found, which suggests that introducing a more risk-sensitive capital regulation (Basel II) is likely to affect Norwegian banks. Support is found for the hypothesis that buffer capital serves as an insurance against failure to meet the capital requirements.

Scale economies, bank mergers, and electronic payments: A spline function approach

Authors: David B. Humphrey (Florida State University, Tallahassee) and Bent Vale (Norges Bank)
Publication: Journal of Banking and Finance 28 (2004), pp.1671-1696

This paper demonstrates the importance of using a flexible cost function specification when analyzing economies of scale and estimating the cost effect of banking mergers. The inflexibility of the translog cost function is illustrated and results are compared to more flexible spline and Fourier cost functions. Using these different approaches, we predict the *ex ante* effect on average cost from mergers over the period 1987–1998 using a balanced panel of 130 Norwegian banks. On average, mergers are predicted to lower costs. Predictions using the Fourier or spline approaches are in overall agreement with computed actual average merger-cost changes *ex post*. On the whole, the 26 mergers studied have lowered average bank costs. Cost effects of the transition from paper-based to electronic payments are also estimated and exceed cost reductions associated with mergers.

