

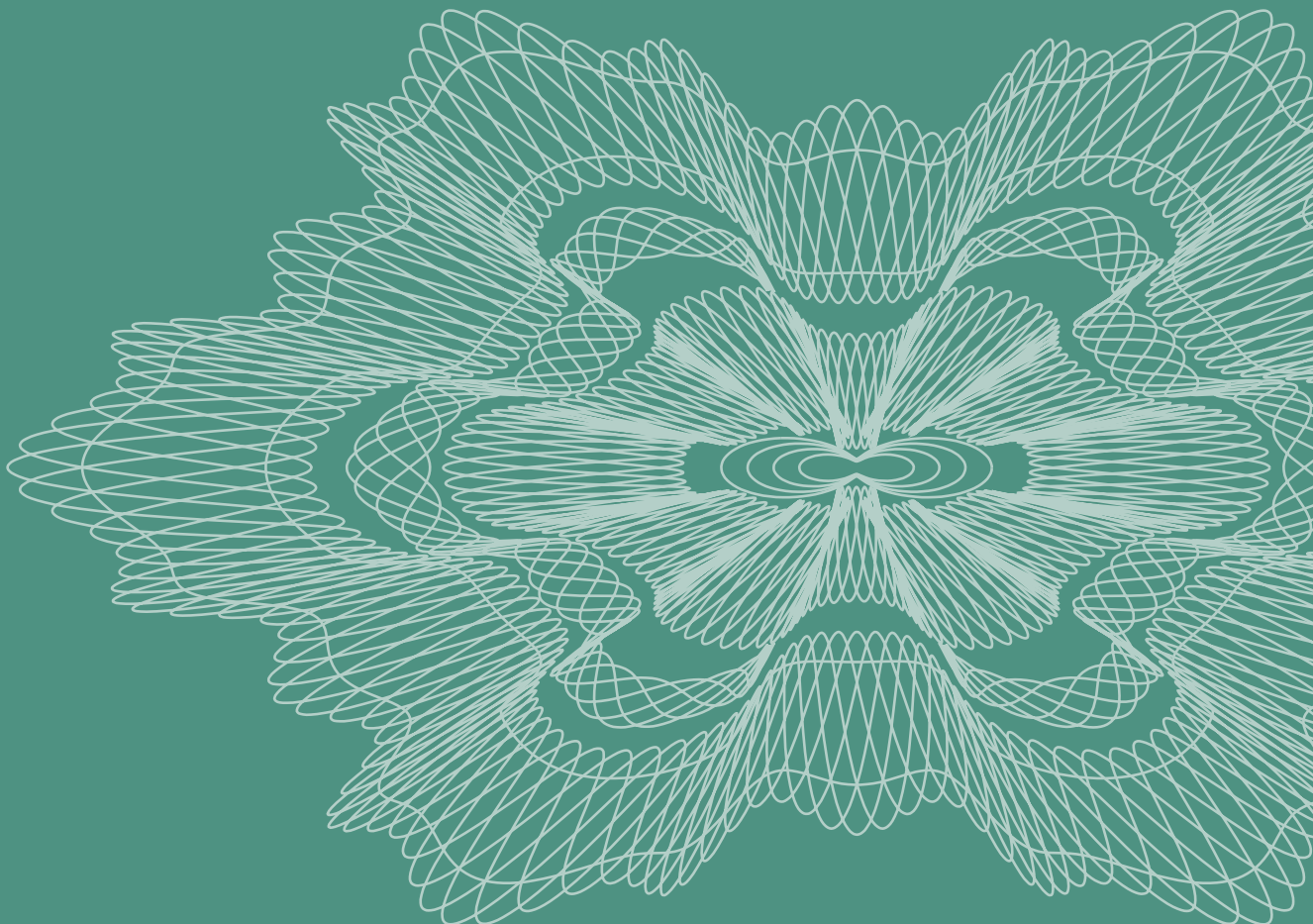
Reports from the Central Bank of Norway
No. 5/2005



Financial Stability

2
05

December



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Norges Bank's reports on financial stability

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 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 discusses the risks facing the financial system, particularly credit, liquidity and market risk. We use the designations low, relatively low, moderate, relatively high and high risk in a qualitative assessment of the **degree of risk**. Changes in the risk situation since the previous report are also evaluated. The risk assessment may be different for the short and for the long term.

The report is published twice a year. The main conclusions of the report are summarised in a submission to the Ministry of Finance. The submission is discussed at a meeting of Norges Bank's Executive Board. Norges Bank's annual *Report on Payment Systems* provides a broader overview of developments in the Norwegian payment system.

Financial Stability 2 / 2005

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The cut-off date for this report was 30 November 2005

Considerable demands on banks' credit risk assessment

With low interest rates and favourable economic conditions, banks' loan losses have been very low over the past couple of years. Combined with lower costs, this has resulted in solid results in the banking sector. Looking ahead, it appears that household real income will continue to rise and unemployment will decline. High prices for our exports, solid global growth and high domestic demand point to continued high corporate profitability for a period. The risk of a substantial increase in banks' loan losses in the near term seems to be fairly low. The outlook for financial stability in the short term is therefore positive.

Solid growth in household income and low interest rates have continued to drive up house prices, although house prices seem to have increased more than implied by these factors alone. Experience shows that high house prices have a relatively long-lasting effect on debt. The sharp rise in house prices that we have observed may thus contribute to an increase in the household debt burden from an already high level in the years ahead, even if the rise in house prices should slow in the period ahead. This would entail a risk of less stable economic developments and higher loan losses for banks in the longer term. When the interest rate is gradually brought up to a more normal level, however, the rise in house prices and debt is expected to edge down. This will reduce the risk of wide fluctuations in activity in the Norwegian economy and in banks' losses and results.

The relationship between developments in house prices and debt is amplified by financial institutions competing for market shares by offering new loan products that facilitate mortgage equity withdrawal. This increases the liquidity of housing wealth. These loan products provide greater opportunities for borrowers to spread consumption over a lifetime. However, the new loan products place considerable demands on banks' credit risk assessment and advisory services. When the interest rate is unusually low, it can be particularly challenging for borrowers to assess their debt-servicing capacity over time.

Svein Gjedrem

Summary

Favourable outlook for global financial stability in the near term

The near-term risks to the stability of the global financial system are low and somewhat lower than in May 2005 when the previous *Financial Stability* report was published. Global economic growth remains strong. Both enterprises and banks are posting substantial profits. Share prices have advanced in the largest markets.

However, the medium and long-term risks are somewhat more pronounced. First, house prices and household debt have increased substantially in many countries. Any correction in the housing market may result in increased saving, lower economic activity and higher loan losses in banks. Second, high oil prices may contribute to lower growth in the global economy. Moreover, oil prices may contribute to higher inflation expectations and higher interest rates than implied by developments in capacity utilisation. Third, a long period of low long-term interest rates has increasingly induced investors to search for yield in markets associated with higher risks than the government bond market. This has pushed up prices in these markets so that the risk of losses may have increased. Finally, imbalances in global trade and cross-border capital flows have increased.

Norwegian banks have achieved solid results

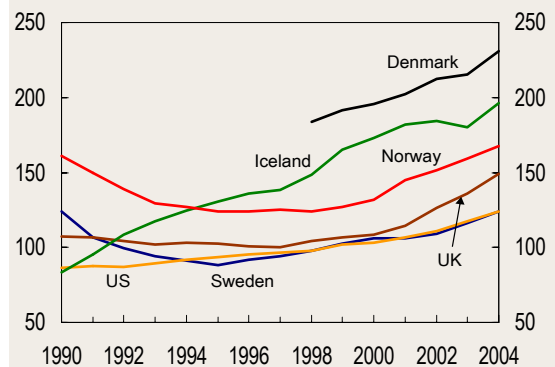
Developments in variables that influence financial stability in the near term have also been satisfactory in Norway. Banks achieved solid results in the first three quarters of 2005, primarily as a result of very low loan losses and lower costs. Low losses reflect low interest rates and solid income growth in both the enterprise and household sectors. Pre-loss profits in relation to total assets have been fairly stable over the past couple of years. High lending growth has contributed to dampening the fall in net interest income in relation to total assets and has countered lower interest margins. Banks' return on equity has improved from 2004 to the first three quarters of 2005. Capital adequacy has declined somewhat in the past year, but financial strength is nevertheless solid. The macroeconomic outlook points to continued low losses and robust results in banks in the near term.

In the longer term, a normalisation of interest rates or weaker cyclical developments could lead to higher loan losses. With solid financial strength and earnings, banks seem well poised to deal with such developments for a period. Interest margins will probably continue to narrow, exerting pressure on banks' earnings. Banks must then increase other income or further reduce costs to maintain profitability.

Households continue to accumulate debt

In the near term, households' financial position is favourable because interest rates are low and household income is rising. Unemployment is also expected to fall somewhat. While

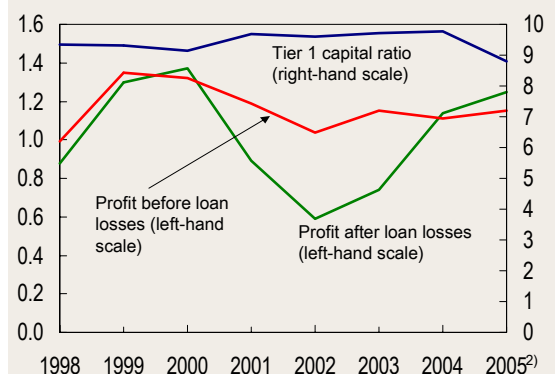
Chart 1 Household debt burden ¹⁾ in selected countries. Annual figures. 1990 – 2004



¹⁾ Debt as percentage of disposable income. Loan debt as percentage of liquid disposable income for Norway.

Sources: OECD, Bank of England, Sveriges Riksbank, Danmarks Nationalbank, Sedlabanki Island and Norges Bank

Chart 2 Banks' Tier 1 capital ratio and pre-tax profit as a percentage of average total assets ¹⁾. Annual figures. 1998 – 2005

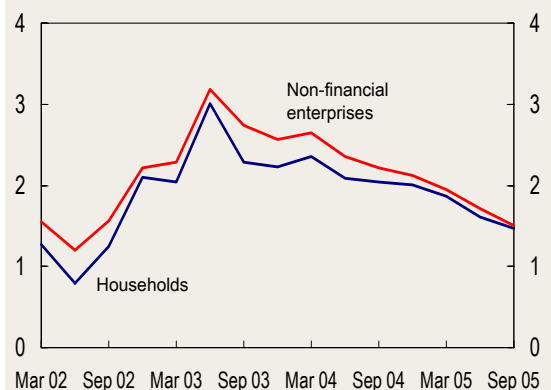


¹⁾ Excluding branches of Norwegian banks abroad

²⁾ As of September 2005

Source: Norges Bank

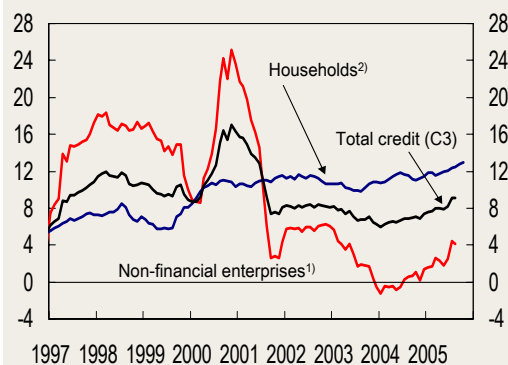
Chart 3 Banks' ¹⁾ lending margins on loans to households and non-financial enterprises. Per cent. Quarterly figures. 02 Q1 – 05 Q3



¹⁾ All banks in Norway

Source: Norges Bank

Chart 4 Credit to mainland Norway. Per cent. Twelve-month growth. Jan 97 – Sep 05

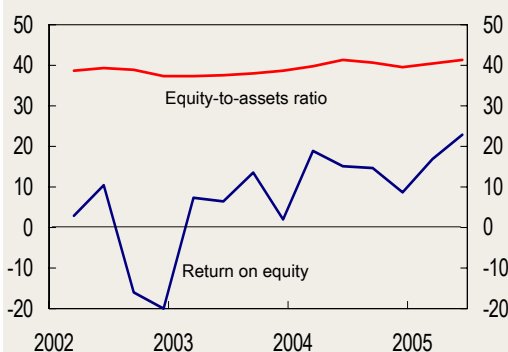


¹) All foreign credit to mainland Norway assumed given to enterprises

²) Household domestic debt

Source: Norges Bank

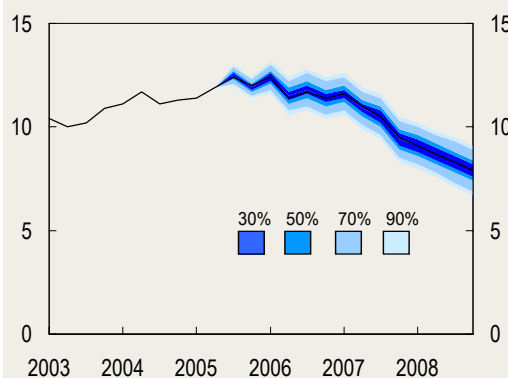
Chart 5 Equity-to-assets ratio and pre-tax return on equity for companies listed on Oslo Stock Exchange. ¹) Per cent. Quarterly figures. 04 Q1 – 05 Q2



¹) Companies registered in Norway with the exception of banks, insurance companies, Statoil and Hydro

Sources: Statistics Norway, Statoil, Hydro and Norges Bank

Chart 6 Growth in household credit. Estimate with fan chart. ¹) Quarterly figures. Per cent. 03 Q1 – 08 Q4



¹) The bands in the fan chart indicate different probabilities for credit growth. The probabilities are among other factors computed based on deviations between estimated and actual credit development during the period 94 Q3 – 05 Q2

Source: Norges Bank

debt has increased, households have also set aside capital in recent years. Housing investment is high. Households' net financial wealth to income ratio has been relatively stable in recent years. A large portion of their financial assets consists of group insurance claims. Most insurance claims are funds which households cannot draw on when their financial situation weakens. Excluding insurance claims, the net financial wealth to income ratio has fallen in recent years. Moreover, only a small portion of financial assets are held by households with high debt burdens.

Household debt accumulation is still very high and the debt to income ratio is higher than at the end of the 1980s. Low- and middle-income households show the highest increase in debt in relation to income in this period. House prices have risen substantially in recent years and the price level may now seem to be somewhat high in relation to developments in income, interest rates, unemployment and residential construction. Experience shows that developments in the housing market have considerable influence on lending and that the effects are long-lasting. Growth in household debt may therefore remain high for several years, even if the rise in house prices should taper off. If so, the debt burden will increase to a very high level. Variable-rate loans account for the bulk of household borrowing. Due to unusually low interest rates, the interest burden is low, but will increase as the interest rate gradually normalises.

Solid corporate profitability

Enterprises' financial position is favourable. Profitability improved from 2003 to 2004 in most industries. Listed companies' profitability has been high in 2005. The number of bankruptcies is continuing to fall. These developments have been driven by high oil prices, increased demand, moderate wage growth and low interest rates. Corporate debt growth has risen, but is still moderate. High earnings have provided enterprises with an ample supply of internal funds to finance their investments and have curbed growth in borrowing. In the longer term, factors such as a deterioration in competitiveness may reduce enterprises' profitability and their capacity to service debt. In addition, lower prices for oil and other export goods may weaken earnings in many industries.

Satisfactory financial stability outlook

With a high equity ratio and continued solid profitability in the corporate sector, the credit risk associated with loans to the corporate market is assessed as relatively low, and somewhat lower than in May. The risk of a substantial increase in losses on loans to households is regarded as relatively low and unchanged since the previous report. Banks' liquidity and market risk are still considered to be relatively low. Banks' performance has improved. On balance, the short-term outlook for financial stability is therefore regarded as satisfactory and somewhat better than half a year ago. The sharp rise in house prices and debt, however, entail a risk of less stable economic developments in the longer term.

1 | International developments and securities markets

1.1 International developments

The near-term risks to the stability of the global financial system are low and somewhat lower than in May when the previous *Financial Stability* report was published. This is attributable to solid earnings in the enterprise and banking sectors. Enterprises and banks have therefore been able to strengthen their capital buffers.

Growth in the global economy is expected to remain strong. The projections for global GDP growth in 2005 have been revised upwards somewhat since May 2005 (see Chart 1.1). The growth outlook has been revised upwards considerably for Japan and revised downwards somewhat for Western Europe. In China, growth is still high but is expected to slow somewhat in 2006.

In the US, Europe and Japan, equity prices have advanced by 6%, 15% and 36% respectively since the previous *Financial Stability* report (see Chart 1.2). US government bond yields have edged up in the past few months. However, international long-term interest rates and real interest rates are still low compared with historical levels.

Low real interest rates and a rise in equity prices appear to be giving mixed signals concerning economic developments. Real interest rates may, however, be affected by factors other than growth prospects. High demand for government bonds, for example, has contributed to keeping interest rates at a low level. Moreover, there is often little correlation between economic growth and equity prices in the short term. The correlation is higher in the long term (see Chart 1.3).

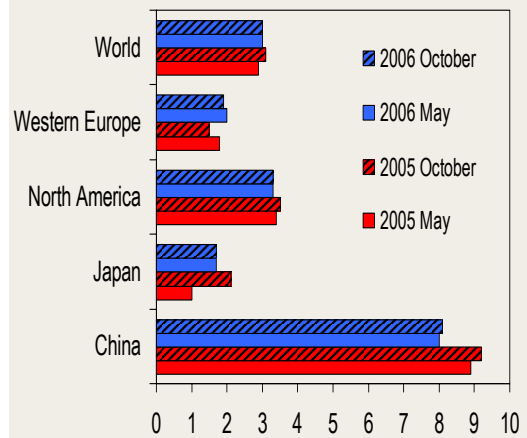
1.2 Main trends and risk factors

Even though the outlook for financial stability is positive in the short term, long-term vulnerability may have increased. Some of the main trends and risk factors for global financial stability are discussed below.

Sharp rise in house prices and household debt growth

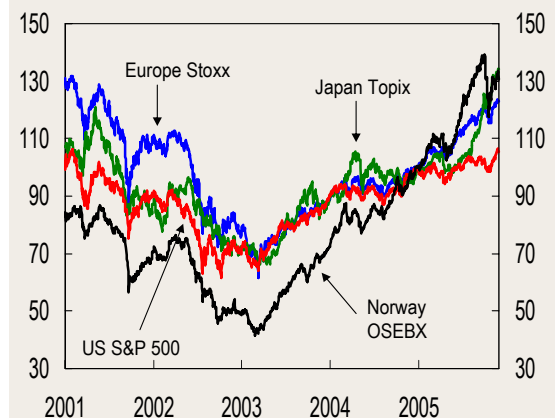
House prices are rising rapidly in many countries, although the pace has slowed somewhat during the past year. One important exception is the US, where the rise in house prices is still strong and is an important driving force behind housing investment and private consumption and thereby economic growth. At the same time, the rise in house prices has contributed to increasing household debt. The share of disposable income that is used to service debt has increased moderately and is at a historically high level in spite of very

Chart 1.1 Forecasts for real GDP growth in 2005 and 2006 as of May and October 2005. Per cent



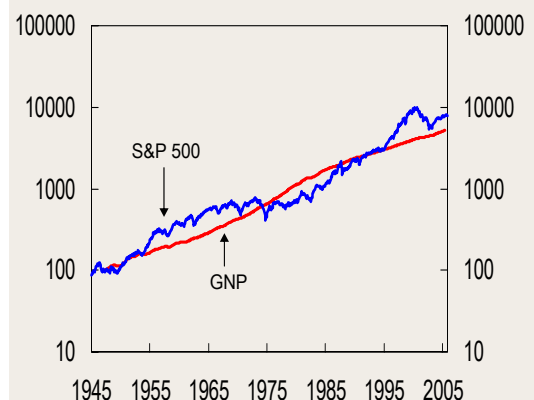
Source: Consensus Forecasts

Chart 1.2 International equity indices. Index 2005 = 100. Daily figures. 1 Jan 01 – 29 Nov 05



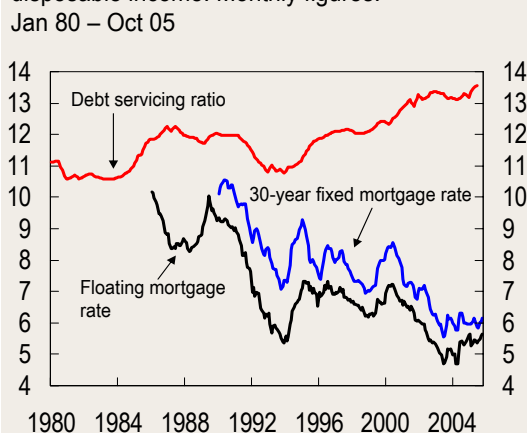
Source: EcoWin

Chart 1.3 GDP and stock prices (price indices) in the US. Logarithmic scale. Index 1 Jan 1947 = 100. Monthly figures. Jan 45 – Oct 05



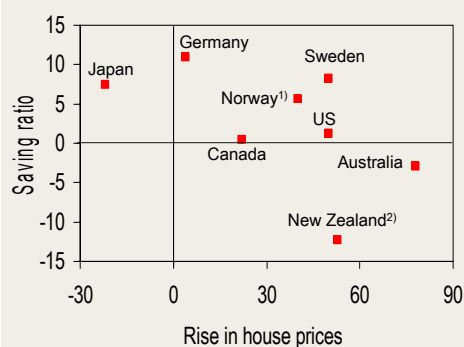
Source: EcoWin

Chart 1.4 US: Mortgage rate in per cent. Interest and instalments on mortgages as percentage of disposable income. Monthly figures. Jan 80 – Oct 05



Source: EcoWin

Chart 1.5 Household saving ratio in 2004 in per cent. Total rise in house prices in percentage of disposable income. 99 Q4 – 04 Q4

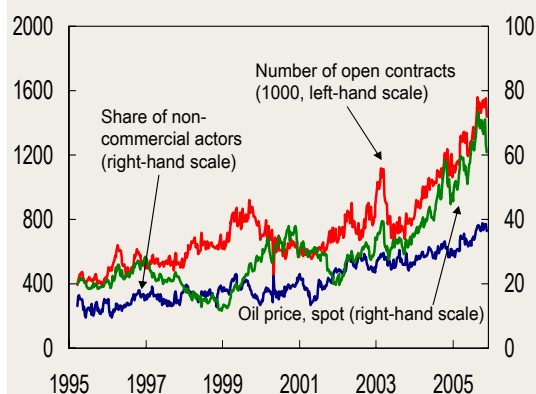


1) Estimated reinvested dividend payments since 2001 excluded from the saving ratio

2) Saving ratio during the financial year March 2003 – March 2004

Sources: OECD, EcoWin, Statistics New Zealand and Norges Bank

Chart 1.6 The market for crude oil derivatives (NYMEX). Open contracts and non-commercial actors' share. Oil price indices. 95 Q1 = 20. Weekly figures. Week 13 1995 – week 46 2005



Sources: CFTC and EcoWin

low interest rates on debt (see Chart 1.4). Both the share of floating-rate mortgages and the share of interest-only loans have increased sharply. The extensive use of such loans makes it easier to service debt today, but increases household vulnerability to higher interest rates or a reduction in income.

The accumulation of assets through the rise in house prices has contributed to low household saving in the US. In a number of other countries, there also seems to be a negative relationship between the rise in house prices and the household saving ratio (see Chart 1.5).¹ A low saving ratio may increase the probability and scale of future financial consolidation among households. If the combination of a high rise in house prices, high debt growth and low saving persists over a prolonged period, a turnaround in the housing market and private demand may be pronounced. This would weaken economic growth and increase banks' loan losses.

The US current account deficit

The large differences in household saving ratios across countries are also reflected in developments in countries' current account balances. The US, Australia and New Zealand have large current account deficits, whereas Japan and Germany have a current account surplus. The US current account deficit is currently record high. At the same time, strong economic growth and a positive interest rate differential against other regions have contributed to high capital inflows to the US and thus to financing the deficit. A weakening of investor confidence in the US economy could, however, engender considerable unrest in securities and foreign exchange markets.

High oil prices

The price of crude oil (both spot prices and futures) has fallen in the past few months, but is still higher than in May 2005. Persistently high oil prices may have a negative impact on global economic growth and thereby on developments in the equity and corporate bond markets. In isolation, high oil prices may also contribute to higher inflation and rising inflation expectations, which may push up interest rates.

The rise in oil prices in the past few years has contributed to a sharp increase in crude oil derivatives trading (futures and options) (see Chart 1.6). The share of contracts entered into by non-commercial operators (financial investors) has risen sharply since 1995. This share has climbed in periods of rising oil prices. It may appear therefore that speculating has been concentrated on rising oil prices. However, there has also been an increasing interest in speculating in falling oil prices during the past year. Even though investors are positioned

¹ Both house prices and saving are also affected by other factors, including interest rates.

in net terms for rising oil prices, the net position as of 15 November only accounted for 1-2% of the number of contracts, compared with about 15% in the second half of 2004. This may indicate that investors are more uncertain about oil price developments in the period ahead.

The search for yield

Investors have traditionally searched for yield by investing in government bonds or other low-risk assets. Yield from low-risk instruments allows investors to hold assets with higher risk and higher expected returns, such as equities. With low long-term interest rates over the past few years, investors have increasingly searched for yield in more risky assets such as corporate bonds, real estate projects, funds with absolute return targets (including hedge funds) and structured credit investments. If the risk associated with such investments has been underestimated, prices may be higher than implied by fundamentals. This would increase the probability of substantial market fluctuations.

Investors' shift towards more risky assets in order to secure their return levels may also contribute to wider fluctuations in investors' portfolios. In periods of financial unrest, there is a negative correlation between government bond prices and equity prices (see Chart 1.7). Some of the asset classes that are replacing government bonds in the search for yield have a positive correlation with equities in such periods. This may amplify any decline in the value of the portfolio.

Bank earnings

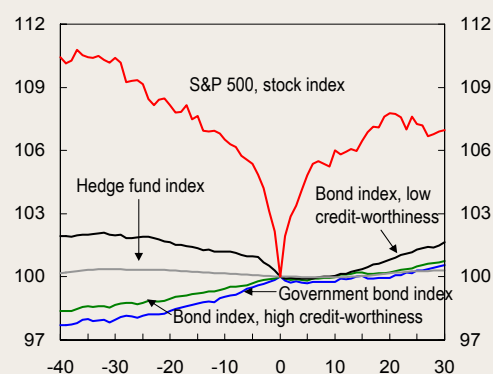
Banks in the US and Europe have traditionally had considerable short-term borrowing and assets with long-term returns. They have thereby profited from the wide difference between long and short rates. Since spring 2004, the difference between long and short rates has narrowed appreciably, especially in the US. This may imply that net interest income will fall. At the same time, loan losses have been very low. It may, therefore, be a challenge for banks to maintain a high level of earnings. Banks' financial strength, however, is solid.

1.3 Securities markets in Norway

Prolonged rise in prices in the Norwegian equity market

In spite of a fall in prices in October, the Oslo Stock Exchange benchmark index has advanced by more than 20% since the last *Financial Stability* report in May, reaching record levels on a number of occasions in this period (see Chart 1.2). As of 29 November, the benchmark index was 37% higher than the peak in 2000. However, both market

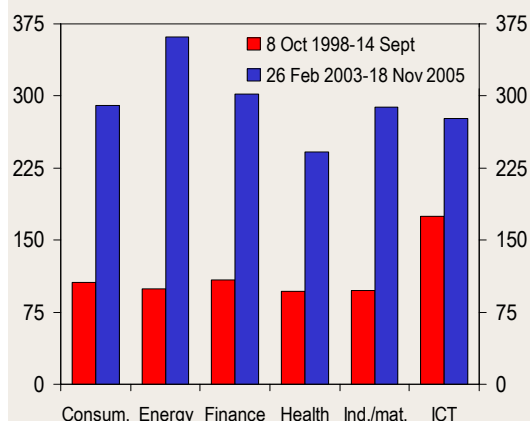
Chart 1.7 Developments in some asset classes during substantial falls in share prices 1998 - 2005.¹⁾ Indexed, low point = 100. Days before/after low point



¹⁾Average of 22 periods with more than a 5 per cent fall in S&P 500. Indices for the US, except the global hedge fund index

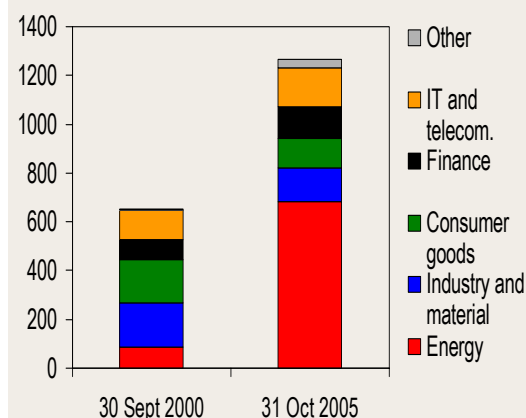
Sources: EcoWin and Norges Bank

Chart 1.8 Sub-indices on the Oslo Stock Exchange during 1998-2000 and 2003-2005. Daily figures



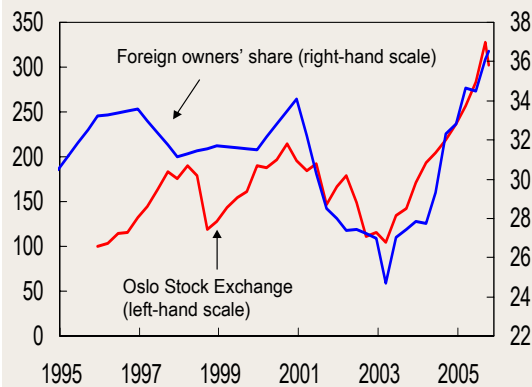
Source: EcoWin

Chart 1.9 Market value by sector on the Oslo Stock Exchange. Billions NOK



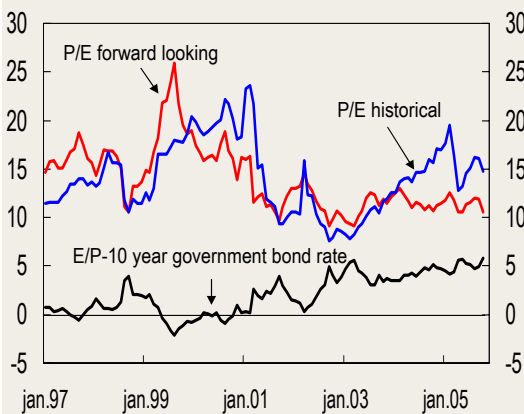
Sources: Oslo Stock Exchange and Norges Bank

Chart 1.10 Foreign owners' share on the Oslo Stock Exchange and developments on the Oslo Stock Exchange. Index 31 Dec 95 = 100. Monthly figures. Des 94 – Oct 05



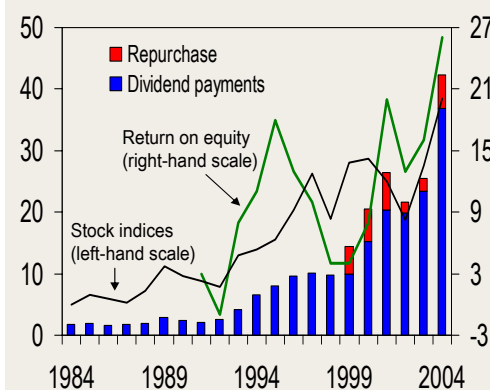
Source: EcoWin

Chart 1.11 Selected valuation indicators for the Norwegian stock market. Monthly figures. Jan.97 – Oct. 05



Sources: EcoWin, Thomson Financials and Norges Bank

Chart 1.12 Dividend payments and repurchase of shares on the Oslo Stock Exchange in billions of NOK (left-hand scale). Return on equity in per cent. Stock indices, 1984 = 5. Yearly figures. 1984 – 2004



Sources: EcoWin and Norges Bank

structure and the economic situation were different in 2000 compared with 2005.

Oil prices are an important driving force

Oil price developments have been an important driving force behind price developments on the Oslo Stock Exchange for a long period. Empirical analyses show a positive correlation between oil prices and the majority of sub-indices on the Oslo Stock Exchange. The correlation is clearly strongest between the price of oil and the energy index.² The period from 1998 to 2000 was marked by a sharp rise in prices for ICT shares (see Chart 1.8). Even though the upswing on the Oslo Stock Exchange from 2003 to 2005 has been somewhat broader than before the peak in 2000, oil prices have probably become an even more important driving force for price developments. Energy companies currently account for more than half of the total market value on the Oslo Stock Exchange, compared with 13% at the end of 2000³ (see Chart 1.9). By comparison, ICT companies accounted for more than 18% of total market value at the end of September 2000.

Foreign ownership share increases

Foreign investors' ownership share of equity holdings on the Oslo Stock Exchange has increased since 2000 (see Chart 1.10). Combined with an increase in government equity holdings,⁴ this means that foreign investors currently own a substantially larger portion of the unrestricted equities on the Oslo Stock Exchange. Foreign investors' equity holdings have fluctuated somewhat in recent years and the fluctuations follow equity prices to some degree. Foreign investors' behaviour may therefore have contributed to amplifying price movements.

Valuation measures

Measured against the bond market, the equity market was priced higher in 2000 than in 2005 (see Chart 1.11). Current bond yields are considerably lower than in 2000. This has contributed to widening the return gap between bonds and equities. In relation to company earnings, equities on the Oslo Stock Exchange were priced higher in 2000 than they are today. On the basis of reported earnings for the previous 12 months, the P/E ratio of the Oslo Stock Exchange was historically high at the end of 2000, whereas on the basis of expected earnings for the next 12 months, the P/E ratio was more than 1.6 times higher in September 2000 than today.

² See *Financial Stability* 1/05.

³ Energy companies account for approximately 35% of the market value of unrestricted equities.

⁴ The increase in government equity holdings reflects the listing of Statoil and Telenor, which are companies where the government ownership interest is high.

Increase in dividend payments and share buy-backs

High earnings in Norwegian listed companies in the past few years have resulted in the accumulation of large cash holdings. This has led to an increase in dividend payments and companies' share buy-backs⁵ (see Chart 1.12). The increase in dividend payments has also been motivated by the planned introduction of tax on dividends received as from 2006.

Many new listed companies and high issue activity

The number of new companies on the Oslo Stock Exchange has increased steadily over the past three years. Twenty-eight new companies have been listed so far this year, which is the highest figure since 1997. Nearly 40% of the new listings are energy companies.

To end-October 2005, the companies on the Oslo Stock Exchange increased their share capital by nearly NOK 25bn through share offerings. If this activity level persists until year-end, the value of share issues in 2005 will be the highest since 2000. Private bond issues are also at their highest level since 2000.

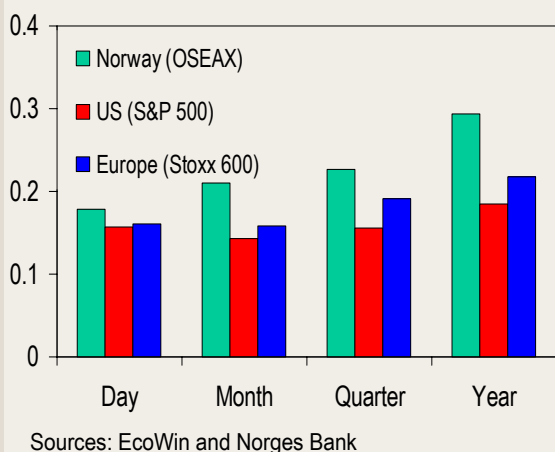
⁵ Share buy-backs were permitted in Norway when the new Limited Liability Companies Act entered into force in 1999. Buy-backs of own shares is a flexible supplement to dividends and fluctuates considerably with profits.

Are equity prices more volatile in Norway than in other countries?

Fluctuations in equity prices over a given period are often referred to as stock market volatility. A common assumption is that equity prices express the present value of future cash flows associated with the equity. The volatility of equity prices will thus be influenced by both investors' risk preferences and expectations concerning fundamentals such as company earnings and the interest rate level.

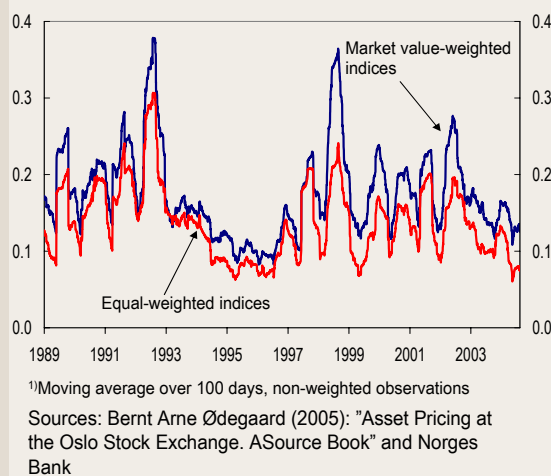
Volatility is often measured as the standard deviation of daily equity price changes over a historical time period. However, stock market volatility varies according to the time horizon applied when measuring price changes. Chart 1 shows annualised stock market volatility in the period 1989-2005 based on different time horizons. Volatility is higher on the Oslo Stock Exchange than on other exchanges in Europe and the US for all the time horizons. The differences are small for daily price changes, but volatility on the Oslo Stock Exchange increases relative to other exchanges in Europe and the US as the time horizon increases.

Chart 1 Volatility in the US, European and Norwegian equity markets during 1989-2005. Measured over different time horizons, annualised



Several factors may explain the higher level of volatility on the Norwegian stock market compared with other markets. The Norwegian stock market is relatively small. Small markets tend to be less liquid and less diversified than larger markets, and this may contribute to higher volatility. Moreover, high volatility may be self-reinforcing. Fluctuations in investors' risk preference may lead to wider swings in investors' required rate of return, and hence equity prices, the higher market volatility is.

Chart 2 Volatility in the Norwegian equity market based on market value-weighted and equal-weighted indices¹⁾. Daily figures. 1989-2004

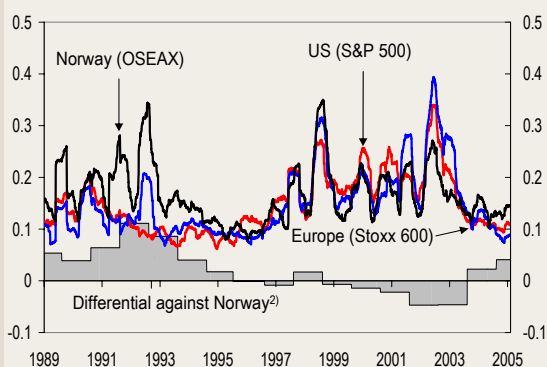


The size of the listed companies may also have an impact on volatility. Small companies tend to have a narrower range of income sources than large companies. This may result in higher volatility in small companies' share prices. Most companies on the Oslo Stock Exchange are small in an international context. Volatility on the Oslo Stock Exchange is still lower when all the companies are given the same weight than when the companies are weighted on the basis of market value (see Chart 2). This may indicate that price developments on the Oslo Stock Exchange are dominated by a few large companies, and that the index is more diversified when the companies are given the same weight. It seems that this factor is of greater importance to volatility on the Oslo Stock Exchange than the fact that small companies' share prices tend to show wide fluctuations.

It is not obvious why volatility increases more in Norway than in Europe and the US when the time horizon increases. One explanation may be that cyclical shares account for a larger portion of the Norwegian stock market than stock markets in Europe and the US.¹ Cyclical shares are heavily dependent on general economic developments so that the price developments vary according to business cycle fluctuations. Since a business cycle tends to span a long period, cyclical shares often feature high volatility when measured over long time horizons.

The difference between the Oslo Stock Exchange and the large stock exchanges has narrowed. While daily price volatility was higher in Norway than internationally in 1989-96, it has been somewhat lower on average in Norway in the period 1997-2005 (see Chart 3). There may be several reasons for this. The Oslo Stock Exchange is now part of a common trading platform together with the other Nordic stock markets through the NOREX cooperation.² This may have contributed to enhancing the transparency of the market and thereby reduced investor uncertainty. At the same time, the listing of large companies such as Statoil and Telenor has probably increased the attractiveness of the Oslo Stock Exchange for foreign investors. This is also reflected in the increase in the number of foreign members. An increase in the number of investors has probably improved liquidity and thereby reduced volatility.

Chart 3 Daily volatility in the US, European and Norwegian equity markets. Daily figures. 1989-2005.¹⁾ Annualised.



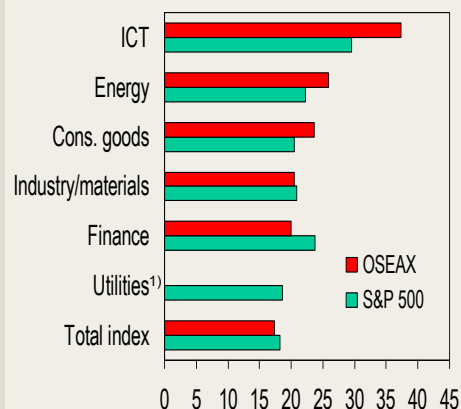
¹⁾ Moving average over 100 days, non-weighted observations

²⁾ Yearly average of differentials against US and Europe

Sources: EcoWin and Norges Bank

A relatively low portion of ICT companies on the Oslo Stock Exchange may also have contributed to reducing the difference in volatility across exchanges.³ Over the past 10 years, equity price volatility for ICT companies has on average been higher than for other types of companies (see Chart 4), which partly reflects the build-up and deflation of the ICT bubble around 2000.

Chart 4 Daily volatility in selected sub-indices in Norway and US. 1996-2005. Annualised. Per cent



¹⁾ Utilities excluded for Norway, because of the low number of enterprises

Sources: EcoWin and Norges Bank

¹ This is partly because non-cyclical companies such as water works, sanitation companies and the like are listed on the stock exchange to a further extent in the US and Europe.

² NOREX is an alliance between the stock exchanges in Stockholm, Helsinki, Copenhagen, Reykjavik and Oslo. The Oslo Stock Exchange was integrated into a common index classification with the other NOREX exchanges in 2000 and a common trading system in 2002.

³ ICT companies' portion of the market value of the S&P 500 index averaged 23% in the period 1996-2005, but was close to 40% at the price peak in 2000. On the Oslo Stock Exchange the portion was 18% and 13% respectively, at the peak in 2000 and in October 2005 (see Chart 1.9).

2 | Macroeconomic developments, households and enterprises

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

Projections Inflation Report 3/2005				
	2005	2006	2007	2008
Private consumption	3%	3½	2¾	2
Public consumption	1¾	2	1¾	3
Mainland gross investment	7¾	6	3¾	2½
Traditional exports	3½	3¾	3½	3¾
Imports	7¾	4¾	2¾	1¾
Mainland GDP	3¾	3¾	2½	2¾
GDP, trading partners ¹⁾	2¾	2½	2½	2½
Registered unemployment rate	3½	3¾	3¾	3¾
CPI-ATE ²⁾	1	1¾	2	2½

¹⁾ Weighted total with Norwegian exports used as weighting factor

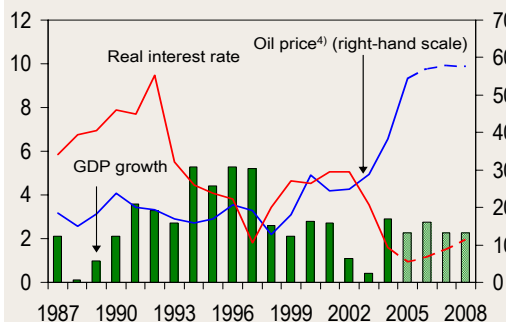
²⁾ CPI-ATE: CPI adjusted for tax changes and excl. energy products

Sources: Statistics Norway, Directorate of Labour and Norges Bank

2.1 Developments in the Norwegian economy

The Norwegian economy is in an upturn and is now expanding at a brisk pace. Low interest rates, high oil prices, strong growth in petroleum investment and high prices for Norwegian exports have been the driving forces. In *Inflation Report 3/05*, mainland GDP growth is projected to increase further in 2005 and then abate somewhat in 2006 and further ahead (see Table 2.1). The growth outlook has been revised upwards slightly since *Financial Stability 1/05*. Capacity utilisation has picked up in the past two years and gradually moved to somewhat above its normal level. However, substantial labour shortages have not emerged in the economy as a whole. The number of registered unemployed has declined in the course of 2005 and was 3.4% in October. The unemployment rate is expected to fall further to 3¼% in 2008.

Chart 2.1 Mainland GDP growth, real interest rate¹⁾ and oil price²⁾. Yearly figures. 1987-2008.³⁾ Per cent



¹⁾ 3-month money market rate deflated by inflation measured by the CPI-ATE

²⁾ USD per (Brent Blend) crude oil. Spot price

³⁾ Projections for 2005 - 2008

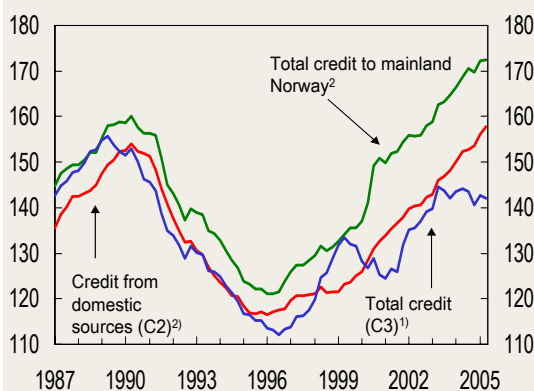
⁴⁾ 2005-figures are based on monthly observations until november. Figures for 2006 - 2008 are forward prices per 28 November 2005

Sources: Statistics Norway and Norges Bank

Norges Bank's key rate has been raised by ½ percentage point to 2.25% since the previous report. The interest rate level is still unusually low. Underlying inflation in the Norwegian economy has edged up since the previous report but is still low. The effective krone exchange rate (TWI) has appreciated by 1½% in the same period.

Monetary policy easing in 2003 and low inflation have resulted in strong growth in household real disposable income, fuelling growth in private consumption and housing investment. House prices have continued to rise, albeit at a gentler pace. Households are still optimistic with regard to their financial situation. Their expectations regarding the domestic economy remain high, but declined somewhat from the third to the fourth quarter.

Chart 2.2 Credit as a percentage of GDP. Quarterly figures. 87 Q1 - 05 Q3



¹⁾ Percentage of GDP

²⁾ Percentage of mainland GDP

Source: Norges Bank

Oil prices have risen since the previous report and were approximately USD 55 per barrel for North Sea oil at the end of November. Petroleum investment will increase substantially in 2005 as a result of large, ongoing development projects both offshore and onshore. Investment in the petroleum sector is expected to fall over the next few years as a result of the completion of projects, but will still remain at a high level.

Mainland fixed investment has risen sharply. Strong growth in fixed investment has gradually become an important driving force behind the expansion. Moderate wage growth, low interest rates and rising demand have improved profitability.

Total credit to mainland Norway as a percentage of mainland GDP is at a historically high level (see Chart 2.2). Household debt growth remains very high and considerably higher than corporate debt growth. Twelve-month growth in total domestic debt has picked up since the previous report, while growth in credit from foreign sources is still negative.

2.2 Households

High debt growth

Household debt has increased rapidly since 2000. In the year to October, debt increased by 13% (see Chart 2.3). Growth in non-mortgage loans (other loans) has also increased. Other loans may be secured on other types of assets such as cars, boats or securities, or may be unsecured. Other loans constitute about 25% of household borrowing. About one-third of other loans are loans to unincorporated enterprises, self-employed and non-profit organisations. Some of these loans are used for business activities.

Each quarter, Kredittilsynet (the Norwegian Financial Supervisory Authority) conducts a survey of selected financial institutions that mainly offer unsecured consumer loans. At the end of the first half of 2005, the 10 companies in the survey had outstanding loans totalling NOK 24bn, an increase of 13% over the past year.

Debt as a percentage of disposable income has increased for low- and middle-income households (deciles 1-6) (see Chart 2.4). Younger households in particular have a high and growing debt burden. At the same time, debt as a share of income has decreased sharply over the past 15 years for the highest income class (decile 10). This partly reflects changes in the tax system. Prior to 1992, it was advantageous for high-income households to borrow extensively.

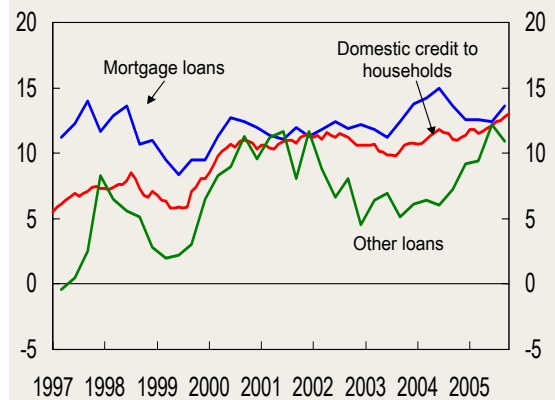
The high rate of debt accumulation in recent years must be viewed in the light of developments in house prices, which have a strong and prolonged effect on debt accumulation.

Continued rise in house prices

The rise in resale home prices has been high since 2003 (see Chart 2.5). Solid growth in household income and low and falling interest rates up to summer 2005 have been the main driving forces (see box on page 22). House sales have been high and increasing for the past six months. The time it takes to sell a house is short. Following a sharp rise through 2004, housing starts have fallen somewhat this autumn.

A survey by Econ Analyse AS shows that it takes longer to sell new housing projects in Østlandet (south-east Norway) than six months ago. However, some developers are still reporting satisfactory sales. According to figures from Prognosesteret AS (a forecasting centre), the number of households planning to move this autumn fell by 12% from the level one year earlier. This is one of the lowest figures recorded in this survey in the past six years. In isolation, this implies a somewhat lower turnover in the housing market in the near term.

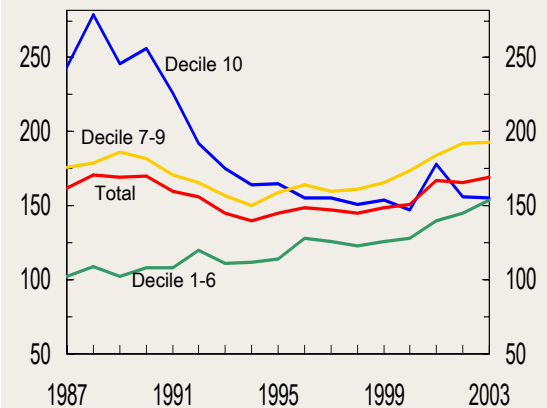
Chart 2.3 Growth in household debt.¹⁾ Per cent. Jan 97 – Oct 05



¹⁾ Twelve-month growth in domestic credit. Four-quarter growth in mortgage loans and other loans

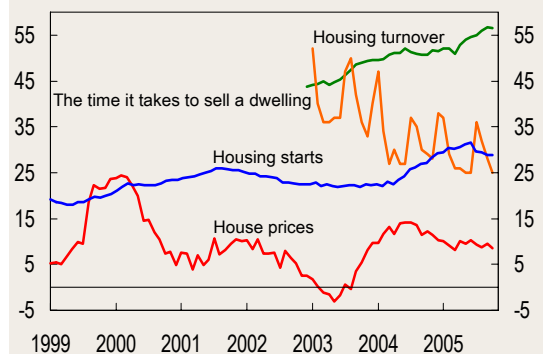
Source: Norges Bank

Chart 2.4 Household debt as a percentage of disposable income divided into deciles by after-tax income. 1987 – 2003



Sources: Statistics Norway and Norges Bank

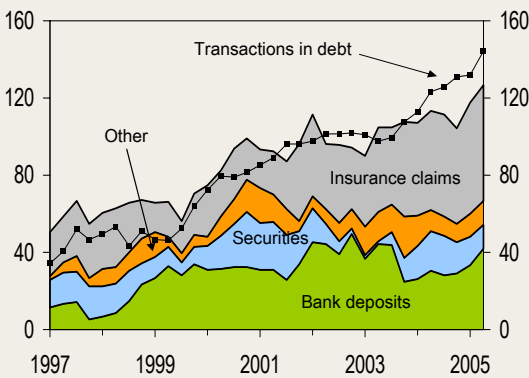
Chart 2.5 Housing turnover and housing starts in thousands. 12-month growth in house prices in per cent. The time it takes to sell a dwelling measured in number of days. Monthly figures. Jan 99 – Oct 05



Sources: Statistics Norway, ECON, FINN.no, Association of Norwegian Real Estate Agents (NEF), Association of Real Estate Agency Firms (EFF) and Norges Bank

Accumulation of financial assets

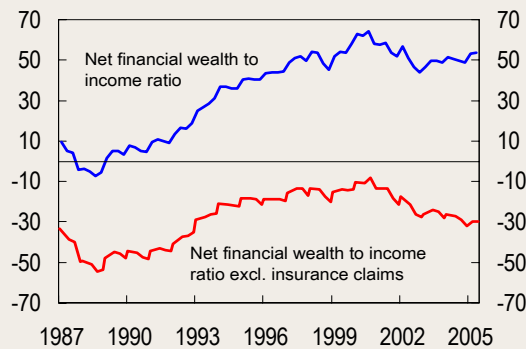
Chart 2.6 Transactions in household debt and in financial assets¹⁾ by investment instrument. Sum last four quarters. Billions NOK. Quarterly figures. 97 Q1 – 05 Q2



¹⁾ Excluding estimated reinvested dividend payments since 2001

Source: Norges Bank

Chart 2.7 Household net financial wealth to income ratio¹⁾ incl. and excl. insurance claims.²⁾ Quarterly figures. 87 Q1 – 05 Q2

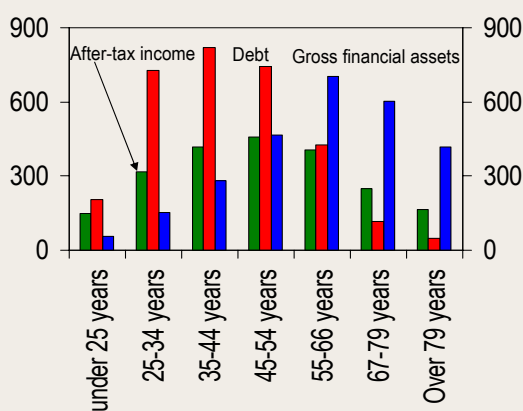


¹⁾ Net financial assets as a percentage of disposable income. Disposable income adjusted for estimated reinvested dividend payments since 2001.

²⁾ Break in the series 1995 Q4

Sources: Statistics Norway and Norges Bank

Chart 2.8 Average after-tax income, debt and gross financial assets¹⁾ by age group. 1000 NOK. 2003



¹⁾ Gross financial assets excl. group insurance claims

Source: Statistics Norway

Households continue to accumulate financial assets. Because of planned changes in the taxation of share dividends, extraordinarily high dividends have been distributed every year since 2002. This makes it difficult to interpret underlying financial developments. A large portion of the dividend payments is probably ploughed back into enterprises in the form of loans or share capital. Adjusted for estimated reinvested share dividends,¹ the increase in household debt has exceeded household financial investments since end-2003 (see Chart 2.6).

On the asset side, contributions to group insurance reserves have shown a particularly strong increase. As a result of low capital gains in life insurance companies and pension funds since 2000, higher payments have been required. In addition, the share of the population approaching retirement age has risen. This normally leads to an increase in net contributions. A lower technical interest rate on capital in life insurance companies and pension funds has also made it necessary to increase contributions to defined-benefit pension schemes. Most insurance claims are illiquid and cannot be used to service debt if problems should arise.

The net financial wealth to income ratio has been reasonably stable for the past two years (see Chart 2.7). If insurance claims are excluded, the net financial wealth to income ratio is negative and declining. In isolation, increased accumulation of insurance claims has reduced the need for other types of investment.

Although financial assets have increased sharply for households as a whole in recent years, they are very unevenly distributed (see box on page 24). The income distribution survey shows that the decile of households with the highest financial assets held approximately 68% of financial assets (excluding group insurance claims) in 2003. Most of the financial assets are held by households whose main income earner is over 55 (see Chart 2.8). Most highly-indebted households naturally have limited financial assets.

Household saving can be used for net investments in financial assets and net investments in fixed assets, mainly housing investment. Household saving, as measured in the national accounts, has remained at a high level in recent years, even when adjusted for estimated reinvested share dividends (see Chart 2.9).

However, net financial investments, as measured in Norges Bank's financial market statistics, are considerably lower than the figures in the national accounts. The large differences create uncertainty about the actual size and composition of household savings.

¹ Norges Bank's estimates for reinvested share dividends for 2001, 2002, 2003 and 2004 are NOK 2bn, NOK 20bn, NOK 36.5bn and NOK 40.8bn respectively.

Ample supply of available resources

In 2004, household borrowing increased by a little less than NOK 130bn. This was equivalent to about a sixth of disposable income. Solid income growth and strong growth in borrowing have led to a substantial increase in the resources available to households in recent years. The scope of borrowing and the use of capital have an impact on the real economy and on the potential build-up of financial imbalances.

The housing market plays an important role in determining the scale of resources in circulation in the household sector. The sale of resale homes leads to a redistribution of resources from those who trade up to those who trade down or exit the housing market. Those who exit the market (or trade down) withdraw mortgage equity, which may be saved or used.

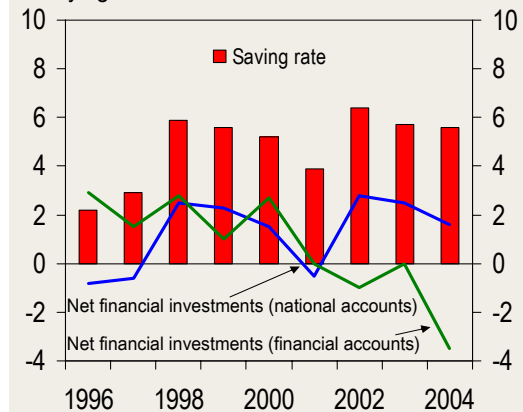
Mortgage equity withdrawal also occurs when the home owner remortgages or takes out an additional secured loan for other purposes than house purchases or home improvements. Banks have launched new loan products that facilitate mortgage equity withdrawal. It is possible, for example, to obtain a bank overdraft facility secured on a dwelling, or to increase a home mortgage and have the increase disbursed in monthly payments. The new loan products increase the possibilities of distributing consumption over a lifetime. However, they place considerable demands on banks' credit risk assessment and advisory services to households. The supply of new products may be regarded as a continuation of the trend since the 1980s towards more highly developed credit markets.

The change in the stock of housing loans less housing investment is a measure of households' total mortgage equity withdrawal. Measured in this way, mortgage equity withdrawal has increased substantially since 2000, to about NOK 40bn annually since 2003 (see Chart 2.10). This is equivalent to about 5% of disposable income.

It is not possible to determine precisely how the withdrawn mortgage equity is used. It may be used for consumption, repaying non-mortgage debt, investment in financial assets and fixed investment other than housing investment. Over the past year, however, household bank deposits have increased substantially, while investment in other types of financial assets has been moderate. Growth in private consumption has been solid, but in line with growth in disposable income.

The increase in household debt can also be viewed in the light of structural conditions other than more smoothly functioning credit markets. First, the number of households has increased substantially in the past few decades (see Table 2.2). At the same time, the number of persons per household has fallen somewhat and the share of one-person

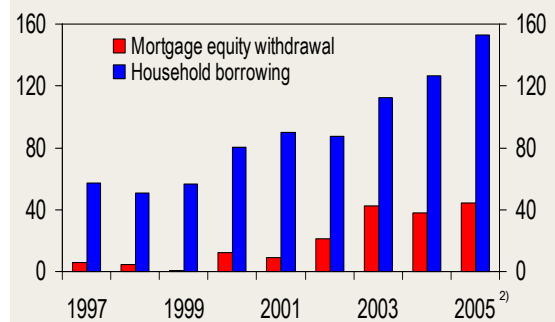
Chart 2.9 Household saving rate and net financial investment¹⁾ as a percentage of disposable income. Yearly figures. 1996 – 2004



¹⁾ Excluding estimated reinvested dividend payments since 2001

Source: Statistics Norway and Norges Bank

Chart 2.10 Household borrowing and mortgage equity withdrawal¹⁾. Billions NOK. Annual figures. 1997 – 2005



¹⁾ Mortgage equity withdrawal is measured as change in the stock of mortgages less housing investment

²⁾ Annualised figures based on figures for the first half of 2005

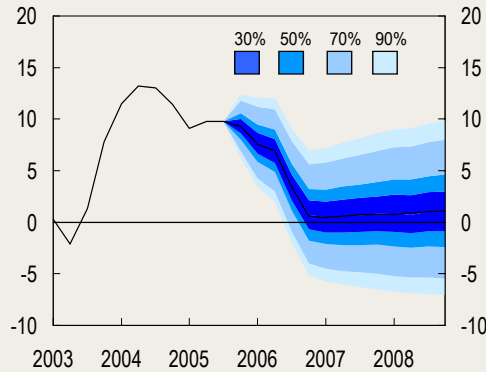
Sources: Statistics Norway and Norges Bank

Table 2.2 Household figures

	1980	1990	2001
Number of households (in millions)	1.52	1.75	1.96
Number of persons pr. household	2.7	2.4	2.3
Households with 1 person (share)	28	34	38

Source: Statistics Norway

Chart 2.11 Model projections and uncertainty for house prices.¹⁾ 4-quarter growth. Per cent. 03 Q1 – 08 Q4



¹⁾ The bands in the fan chart indicate different probabilities for developments in house prices. The probabilities are computed based on factors such as the deviations between estimated and actual developments in house prices during the period 90 Q2 – 05 Q2

Sources: NEF, EFF, FINN.no, ECON and Norges Bank

households has increased considerably. This trend has contributed to a need for more dwellings, and probably also increased the demand for home mortgages. Second, inflation and nominal interest rates fell sharply from the late-1980s to the mid-1990s. In recent years, inflation and interest rates have been stable and low. Low interest expenses at the beginning of a loan life has made it easier to service loans in the short term and probably contributed to a higher debt burden among first-time homebuyers.

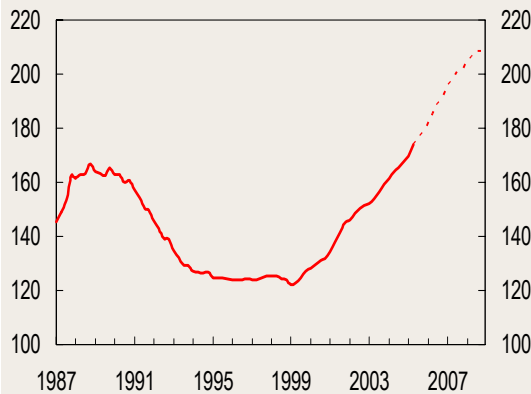
Outlook

The financial situation of households as a whole is sound. Growth in disposable income has been high in recent years. A sharp rise in house prices has increased households' housing wealth, but also led to high debt growth.

In the period ahead, a gradual normalisation of interest rates may moderate the rise in house prices. A high level of residential constructions and an increased supply of dwellings will also ease pressures in the housing market. However there is considerable uncertainty regarding house prices in the period ahead (see Chart 2.11). A slower rise in house prices will gradually be reflected in weaker household debt growth, but the high rise in house prices of previous years will nevertheless keep debt growth at a high level for many years ahead.

The household debt burden is currently at a historically high level. The household debt and interest burden projections are based on the baseline scenario in *Inflation Report 3/05* and estimated relationships for house prices and household debt. The estimates are not based on a complete model of households' portfolio choices and saving behaviour in interaction with other sectors, but on a simplified analysis of the relationships between variables such as interest rates, house prices and borrowing. The projections imply a debt burden of over 200% in 2008 (see Chart 2.12).

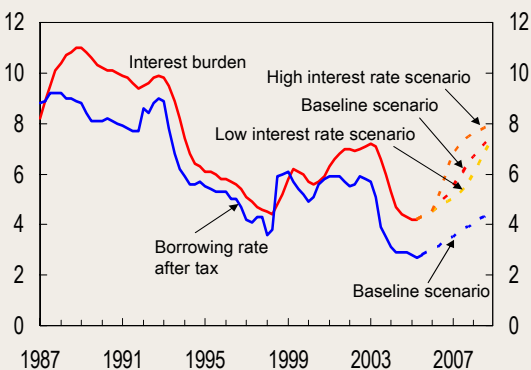
Chart 2.12 Household debt burden¹⁾. Quarterly figures. 87 Q1 – 08 Q4



¹⁾ Loan debt as a percentage of liquid disposable income (disposable income less the return on insurance claims)

Source: Norges Bank

Chart 2.13 Household interest burden¹⁾ and household borrowing rate after tax. Quarterly figures. 87 Q1 – 08 Q4



¹⁾ Interest expenses after tax as a percentage of liquid disposable income (disposable income less return on insurance claims) plus interest expenses

Source: Norges Bank

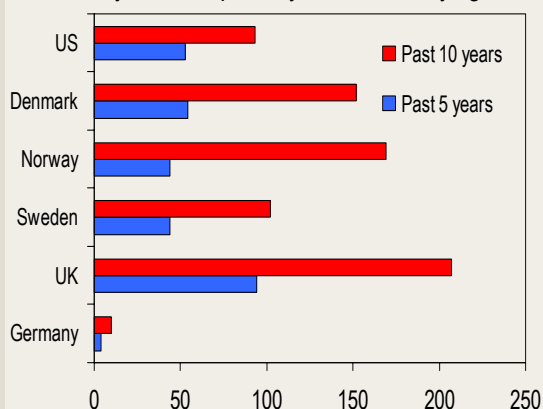
The interest burden is still very low because of the low interest rate level (see Chart 2.13). The interest burden increases in pace with the interest rate, and at the end of the projection period will be somewhat higher than in 2002. In Norges Bank's *Inflation Report 3/05*, various alternatives for developments in inflation and future interest rates are described. A path with higher inflation could result in a higher interest rate in the future and a higher interest burden.

Variable-rate loans account for the bulk of household borrowing. The build-up of debt will lead to higher household interest expenses when the interest rate reaches a more normal level. Some households may then encounter debt-servicing problems. Higher interest expenses may lead to lower demand for goods and services and hence weaker corporate profitability and debt-servicing capacity. This may lead to higher losses in financial institutions. The higher household debt is, the stronger the effect of households on the corporate sector may be. The high household debt burden thus implies increased long-term risks to financial stability.

Developments in house prices

House prices have increased considerably in a number of countries in recent years (see Chart 1). In Norway, house prices have risen by over 40% over the past five years. Higher house prices are an important driving force behind the rise in household debt and wealth, and most household debt is secured on dwellings. If house prices should fall, banks' loan losses may increase. Whether house prices are now overvalued compared with the level indicated by economic fundamentals, is therefore an important question.

Chart 1 House prices. Percentage change. Past 10 years and past 5 years. Quarterly figures¹⁾



¹⁾ Calculated using the latest available observation from each country

Sources: EcoWin, FINN.no, ECON, NEF and EFF

House prices are determined by supply and demand. Supply is fairly stable in the short term, however, since the number of new dwellings per year is low compared with the total housing stock. House prices will therefore mainly fluctuate in pace with demand in the short term. Demand depends to a large extent on interest expenses and household income, as well as expectations concerning future interest rates and income.

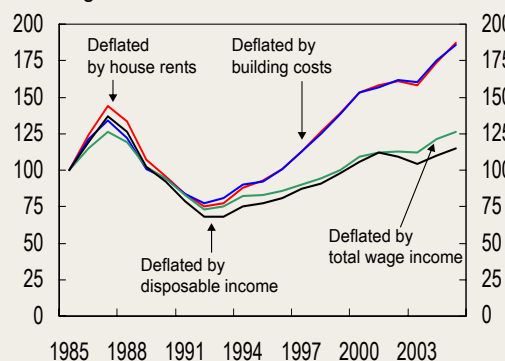
Labour market developments also have an impact on demand for owner-occupied dwellings. Lower unemployment pushes up house prices, since it results in expectations of higher wage growth and less uncertainty concerning future debt-servicing capacity. In addition, housing demand also depends on demographic conditions such as cohabitation patterns, population size and the number of first-time home buyers.

As the alternative to buying a house is to rent, developments in the relationship between house prices and rents are often used to assess whether house prices

are overvalued relative to a long-term value. If house prices increase relative to rents, the expected return on buying houses for rental purposes will decline, and it will be relatively cheaper to rent than to buy. This dampens demand for owner-occupied dwellings, pushing house prices down and market rents up. The relationship between house prices and house rents *may* therefore be stable over time.

If house prices rise more than building and land costs, more housing projects will be profitable. This leads to an increase in residential construction, which over time contributes to lower house prices and higher building and land costs. The relationship between house prices and building and land costs will therefore probably be stable in the long term.

Chart 2 House prices deflated by the house rent index in the CPI, building costs, household disposable income and total wage income. Indexed, 1985=100. Annual figures. 1985-2005¹⁾



¹⁾ Projections for 2005

Sources: Statistics Norway, NEF, EFF, FINN.no, ECON and Norges Bank

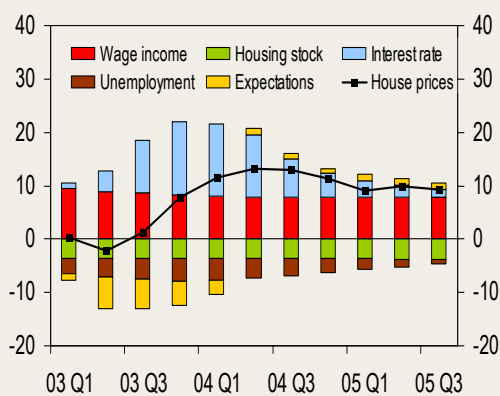
Chart 2 shows house prices deflated by house rents and building costs.¹ According to these indicators, house prices are now at a high level. The chart also shows the relationship between house prices and household disposable income, and between house prices and total wage income in the economy. House prices are also high relative to income levels, but lower than or close to the previous peak in 1987.

The indicators in Chart 2, however, do not measure whether house prices are overvalued relative to rents, building costs and income, or whether they are high as a result of developments in other fundamentals. The interest rate and interest rate expectations, for example, are important explanatory factors. Long-term real interest rates, both in Norway and internationally, have been low since summer 2004.² If long-term real interest rates remain low,

this will in isolation result in a higher house price level. As a result, the potential long-term relationship between house prices and house rents, and between house prices and income, will also shift to a higher level.

An alternative to studying indicators is to estimate an empirical model using fundamentals as explanatory variables. The difference between actual and calculated house prices can then, under certain conditions, be used as a measure of whether they are overvalued or not relative to a calculated fundamental value.³ An empirical model for house prices was presented in *Financial Stability* 1/04. The model was estimated using quarterly data from 1990 Q2 to 2004 Q1. According to this model, house prices are determined by 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 financial situation and the Norwegian economy. Demographic changes will only influence house prices indirectly by their effect on overall wage income in the economy.

Chart 3 House prices and calculated contributions from wage income, housing stock (building starts), unemployment, interest rate and expectation variable. Contributions in percentage points to 4-quarter growth



Sources: NEF, EFF, FINN.no, ECON and Norges Bank

Chart 3 shows the calculated contribution to the actual rise in house prices from the model's explanatory factors.⁴ The chart indicates that a considerable share of the recent rise in house prices can be explained by changes in fundamental factors such as interest rates, income, unemployment and housing stock. A large part of the period shown in Chart 3, however, is also part of the model's estimation period. If the model is going to be used to assess whether the recent rise in house prices cannot be

explained by fundamental factors, the model should be estimated over a shorter period and then simulated forward. If house prices are now overvalued, we would expect that these types of model *cannot* fully explain the recent rise in house prices.

We have conducted an analysis of this kind, with the model estimated over shorter periods and then simulated over the last five years.⁵ Calculated in this way, the actual level of house prices in the third quarter of this year is between 7 and 10 per cent higher than the levels indicated by the simulations.⁶ The deviation may reflect a sharper increase in house prices than implied by fundamental factors, but may also be due to changes in fundamental explanatory factors that are not included in the model. For example, the model will not capture the possible effect on house prices of the marked increase in share dividends since 2002. In addition, house prices may have been pushed up by expectations that interest rates would remain low.

Overall, the analysis indicates that house prices are somewhat high in relation to the level implied by fundamental factors. However, there is substantial uncertainty surrounding calculations of a fundamental value for house prices. A gradual increase in the interest rate level will probably contribute to a slower rise in house prices ahead. This reduces the risk of a substantial correction in house prices further ahead.

¹ House rents are regulated to some extent. This probably affects developments in the relationship between house prices and house rents, and may be contributing to the indicator's current high level. Figures for developments in land costs are not available. If land costs had been included in building costs, the ratio of house prices to building costs would probably have been pushed down.

² For further discussion, see box in *Inflation Report* 1/05: "Why are long-term interest rates so low?".

³ See for example the article "What drives house prices?", by D.H. Jacobsen and B.E. Naug in *Economic Bulletin* 1/05. See also IMF (2004): "The global house price boom". World Economic Outlook September 2004, World Economic and Financial Surveys. Washington. IMF.

⁴ The values for interest rates and income for 2005 Q3 are based on projections from *Inflation Report* 3/05.

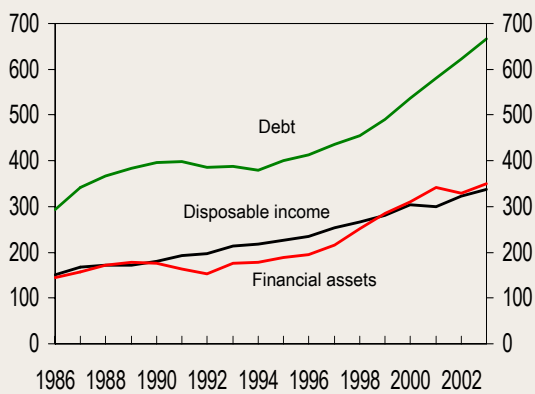
⁵ The simulation uses model-estimated values of lagged house prices and actual values of explanatory factors.

⁶ An alternative model for house prices is also shown in the article "What drives house prices?" in *Economic Bulletin* 1/05. When similar simulations are applied in the alternative model, the actual house price level in 2005 Q3 is 7-10 per cent higher than the levels indicated by the simulations.

Distribution of household debt, income and financial assets

Household debt, disposable income and financial assets have increased sharply since the years prior to the banking crisis. This analysis only covers the group “indebted households”. Statistics Norway’s Income and Property Statistics show that average debt in this group rose by 95% from 1987 to 2003 (see Chart 1). In the same period, this group’s average disposable income increased by 100% and average financial assets by 122%. Income is the first line of defence against debt servicing problems. The next line of defence is financial assets. This box shows the distribution of debt, income and financial assets in 1987 and 2003. Group insurance claims are not included in financial assets in these statistics. Data for 2003 cover approximately 14 500 households. There were roughly 2 700 observations for 1987. There is therefore more uncertainty associated with the assessments of households’ financial position in 1987.

Chart 1 Debt, disposable income and financial assets¹⁾. Average. Indebted households. Thousands of NOK. 1986-2003



¹⁾ Exclusive group insurance claims

Sources: Statistics Norway and Norges Bank

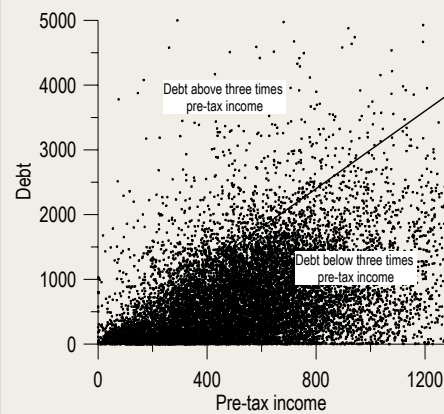
Developments in debt and income

There is generally a positive relationship between debt and income. However, there are wide behavioural differences among households (see Chart 2).

Banks’ often apply as a rule of thumb that households should not borrow more than three times their pre-tax income. The area above the solid line represents households with debt that was higher than this in 2003, which accounted for 11% of the group “indebted households”.

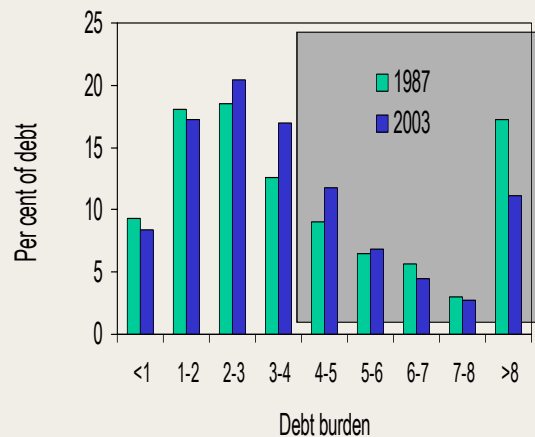
The limit for loans that are three times pre-tax income corresponds to a debt burden in the interval 4-5. The debt burden is the ratio of loans to disposable income. Disposable income is approximately the same as income after tax less debt interest. The share of total debt held by households with a debt burden higher than 4 fell from 41% in 1987 to 37% in 2003 (see Chart 3). In 1987, a much larger share of the debt was also held by households with a debt burden higher than 8. The differences are primarily due to tax rules that until 1992 made it extremely advantageous for high-income households to borrow extensively.

Chart 2 Pre-tax income and debt in indebted households in 2003. Thousands of NOK



Source: Statistics Norway and Norges Bank

Chart 3 Share of debt distributed by debt burden. Per cent. 1987 and 2003

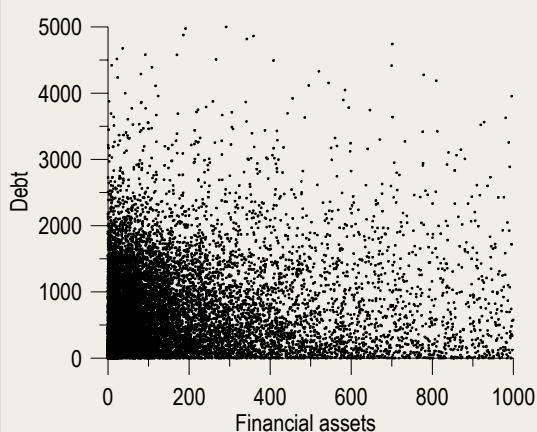


Source: Statistics Norway and Norges Bank

Developments in debt and assets

Chart 4 shows that there is no clear relationship between debt and financial assets. Financial assets are unevenly distributed. Households' average gross financial assets amounted to NOK 350 000 in 2003, while approximately 75% of households had less than NOK 250 000 in financial assets. A very small share of households with a high level of debt had high financial assets.

Chart 4 Debt and financial assets in indebted households in 2003. Thousands of NOK

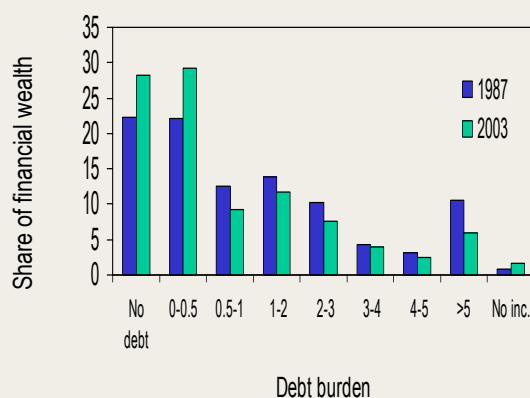


Source: Statistics Norway and Norges Bank

The share of total debt held by households with small financial buffers rose from 1987 to 2003. In 1987, 41% of the debt was held by households with financial assets equivalent to less than 10% of their debt. In 2003, the share had increased to 50%. The share of debt held by households with both a debt burden higher than 4 and financial assets of less than 10% of their debt rose from 21% to 24% in this period.

Although households as a whole have built up their financial assets in recent years, only a small portion of financial assets was held by households with a high debt burden in 2003 (see Chart 5). The share of financial assets held by households with a debt burden higher than five fell from 11% in 1987 to 6% in 2003. The share of financial assets held by debt-free households with a debt burden less than one increased from 57% in 1987 to 67% in 2003.

Chart 5 Share of financial wealth distributed by debt burden. Per cent. 1987 and 2003



Source: Statistics Norway and Norges Bank

Overall evaluation

A considerable share of the debt in 2003 was held by households with a high debt burden. At the same time, only a small portion of financial assets was held by households with a high debt burden. Therefore, growth in financial assets has only to a limited degree reduced the risk associated with the high rate of debt accumulation.

2.3 Enterprises

Improved profitability

Corporate profitability improved sharply from 2003 to 2004. Operating margins improved in most industries. Low interest rates resulted in a clear decline in net financial expenses in 2004. This contributed to a strong increase in return on equity (see Chart 2.14). The profitability of all industries improved from 2003 to 2004 (see Chart 2.15). Commercial services and construction posted particularly high returns on total assets.

High oil prices contributed to a substantial improvement in the profitability of enterprises operating in the oil and gas sector from 2003 to 2004.

The results of listed companies for the first three quarters of 2005 show a continued positive profitability trend in most industries. Expectations of solid results, partly due to high oil prices, have led to a sharp rise in share prices this past year. Developments in listed companies provide a strong indication that profitability in the Norwegian corporate sector as a whole improved in the first three quarters of the year.¹

Favourable economic developments led to a further decrease in the number of bankruptcies through the first three quarters of 2005.

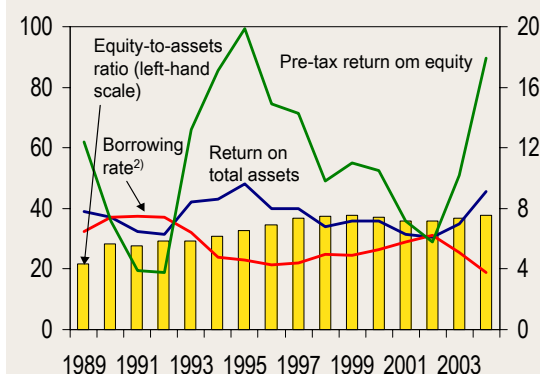
Lower bankruptcy probabilities

Norges Bank's bankruptcy prediction model estimates the probability of a limited company going bankrupt in the course of the next three accounting years. The predicted bankruptcy probabilities after the 2004 accounting year are a little lower than one year earlier. The decline is more pronounced for the most exposed enterprises than for the median enterprise (see Chart 2.16).

Risk-weighted debt, defined as bankruptcy probability multiplied by bank debt, is a rough estimate of financial institutions' future losses. Risk-weighted debt as a percentage of bank debt expresses expected loss per krone of debt in the event of bankruptcy and no dividend from the estate in bankruptcy. Both a decline in bank debt and a lower bankruptcy probability in several key industries contributed to a reduction in risk-weighted debt. The improvement was most pronounced in commercial services (see Chart 2.17).

¹ See the box "Relationship between the results of companies listed on the Oslo Stock Exchange and of the Norwegian enterprise sector as a whole" in *Financial Stability 2/04*.

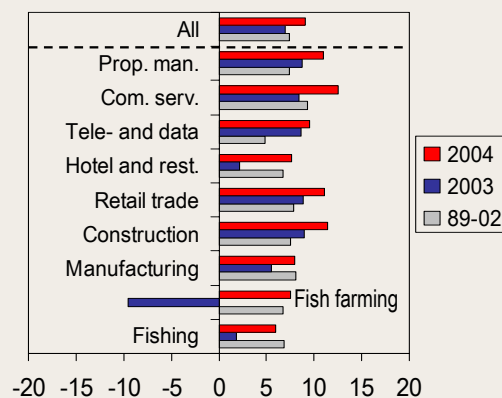
Chart 2.14 Key figures for enterprise sector.¹⁾ Annual figures. Per cent. 1989 – 2004



¹⁾ Public corporations excluding enterprises in the oil and gas industry, finance sector and holding companies
²⁾ Interest expenses as a percentage of total debt

Source: Norges Bank

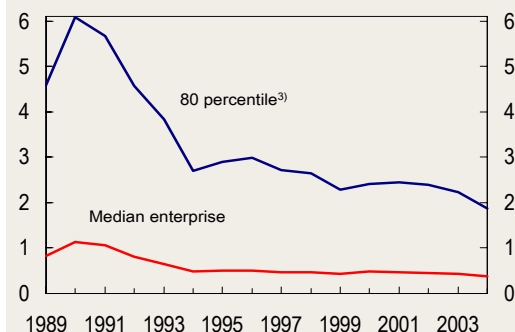
Chart 2.15 Return on total assets.¹⁾ Average. Per cent



¹⁾ Public corporations excluding enterprises in the oil and gas industry, financial sector and holding companies

Source: Norges Bank

Chart 2.16 Predicted bankruptcy probability¹⁾ for non-financial enterprises.²⁾ Per cent. Yearly figures. 1989 – 2004



¹⁾ Probability of bankruptcy within three years. The level of bankruptcy probability for 2004 has been adjusted for missing accounts

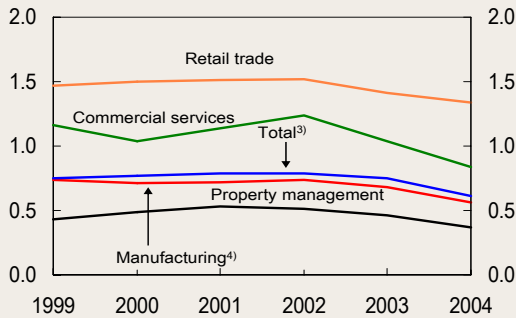
²⁾ Excluding enterprises in the oil and gas industry and public sector

³⁾ The enterprise with higher bankruptcy probability than 80 per cent of the enterprises and lower bankruptcy probability than 20 per cent of the enterprises

Source: Norges Bank

Increased credit growth and high investment

Chart 2.17 Risk-weighted debt¹⁾ as a percentage of bank debt in selected industries and total²⁾. Annual figures. 1999 – 2004



¹⁾ Risk-weighted debt is calculated as bankruptcy probability multiplied by bank debt for each enterprise and then aggregated for all enterprises

²⁾ The 2004-level has been adjusted for missing accounts

³⁾ Non-financial enterprises excluding enterprises in the oil and gas industry and holding companies

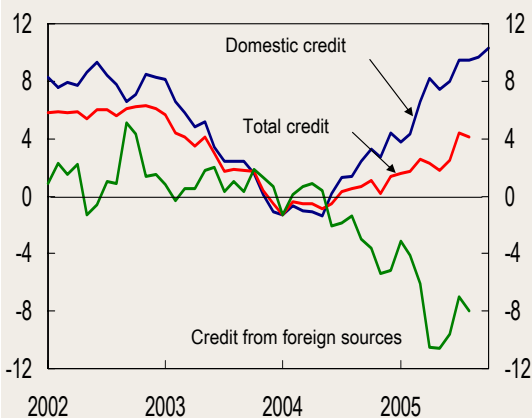
⁴⁾ Excluding mining

Source: Norges Bank

High demand and solid profitability have contributed to boosting mainland business fixed investment in the last few quarters. Mainland fixed investment increased by just over 15% from 2004 Q2 to 2005 Q2. Investment growth has been high in both manufacturing and retail trade and services. As a result of major ongoing development projects, growth in petroleum sector investment will be very high in 2005. Prospects of persistently high oil prices may contribute to continued high investment in the petroleum sector even when the ongoing projects are completed.

Growth in credit to enterprises has also picked up. Total year-on-year growth in credit to mainland enterprises was 4.1% at end-August this year (see Chart 2.18). Growth in credit from domestic sources has increased, while growth in credit from foreign sources has been negative. The shift towards domestic financing has been mainly driven by mainland enterprises. Growth in lending to the petroleum sector and shipping enterprises has increased from both domestic and foreign sources. The shift towards domestic financing among mainland enterprises is probably largely motivated by the low interest rate level in Norway.

Chart 2.18 Growth in credit to mainland non-financial enterprises. 12-month growth. Per cent. Monthly figures. Jan 02 – Sep 05



Source: Norges Bank

Enterprise financing and assets

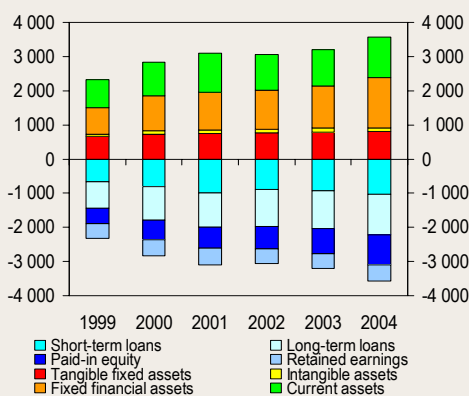
Enterprises accumulate financial assets and real capital (see Chart 2.19). Enterprises' funding requirements for financing their investments depend on their stock of liquid internal capital and their access to fresh internal capital from the enterprise. Rising corporate profitability led to a marked increase in the supply of internal capital from 2003 to 2004.

On average, the equity ratio, both for most industries and overall, has increased in recent years (see Chart 2.20). The picture is somewhat different when looking at dispersion within each industry. High dividends have led to a reduction in the equity ratio of enterprises with medium and high equity ratios. In many industries, the median enterprise (distributed by equity ratio) has reduced its equity ratio somewhat. Enterprises with a low equity ratio, on the other hand, have substantially increased their financial strength.

Dividends have been very high in recent years, probably as a result of adaptation to the dividend tax to be introduced in 2006. In relation to equity, dividends have increased markedly in recent years (see Chart 2.21). A substantial portion of the dividends is ploughed back into the enterprises in the form of paid-in equity or loans to the enterprises.

Bank loans have traditionally been the corporate sector's most important source of funding (see Chart 2.22). However, enterprises also rely on foreign funding sources, bonds, notes and short-term paper and loans from other financial institu-

Chart 2.19 Enterprises' assets and financing.¹⁾ Stock. Billions of NOK. Yearly figures. 1999 – 2004



¹⁾ Public corporations with the exception of enterprises in the oil and gas industry, financial sector and holding companies

Source: Norges Bank

tions. In the period 1995-1999, corporate debt increased substantially. This was a period of expansion with a surge in investment. Corporate debt has stabilised over the past five years. The upswing in investment in 2004 and 2005 has largely been financed by enterprises' internally generated funds.²

The commercial property market is improving

Property management companies account for a good third of banks' lending to the corporate sector. The low interest rate level has contributed to an improvement in the profitability of these companies.

As a result of low interest rates, ample market liquidity and relatively high optimism, commercial property prices have risen in the past two years. From the first half of 2003 to the same period in 2005, prices for office and commercial property rose by 24%.

Long-term interest rates have been low in both Norway and other countries for a long period. The search for yield has made commercial property more attractive. Total commercial property sales in Norway appear to be considerably higher in 2005 than in 2004 (see Chart 2.23). However, sales of commercial property in Sweden are still far higher, totalling over SEK 90bn in 2004.

Increased demand for commercial property for investment purposes has resulted in an increase in the activity of syndication companies.³ They facilitate investment in property projects for institutional and private investors. Large projects of this nature have been carried out in several cities over the past year. Syndication companies accounted for 35% of total commercial property sales in 2004, and have accounted for 29% of total commercial property turnover so far in 2005.⁴

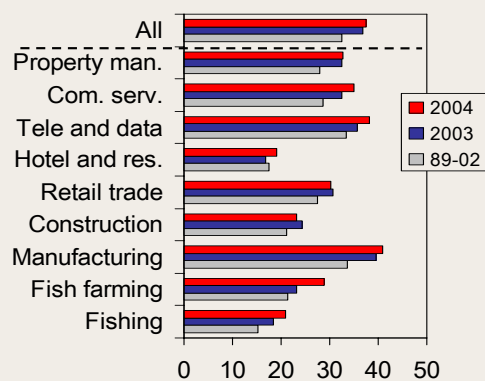
The first property funds in Norway were established in 2004. These funds make it easier for institutional investors to invest capital in property across national borders. This implies that commercial property has become a more liquid investment vehicle in Norway. Property funds have long been common elsewhere in Europe.

² The figures in Chart 2.22 are not directly comparable with the figures in Chart 2.24. This is mainly because the figures in Chart 2.24 are derived from a database comprising only debt to other sectors. Chart 2.22 also includes enterprises' debt to other enterprises.

³ A syndication company operates as a project broker. The company buys a property, establishes a new company to own this property and then sells units in the new company to investors. Syndication also allows small investors to access the commercial property market.

⁴ Source: DnB NOR Eiendomsmebling

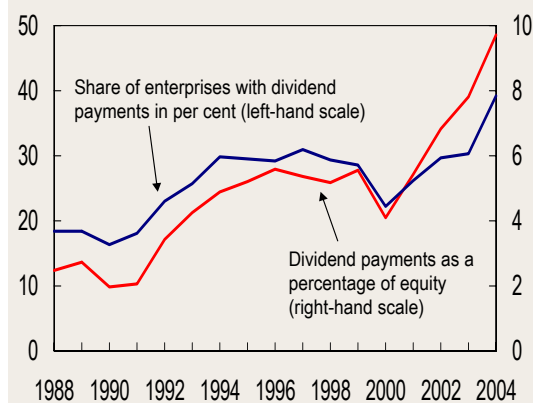
Chart 2.20 Equity-to-assets ratio.¹⁾ Average. Per cent



¹⁾ Public corporations with the exception of enterprises in the oil and gas industry, financial sector and holding companies

Source: Norges Bank

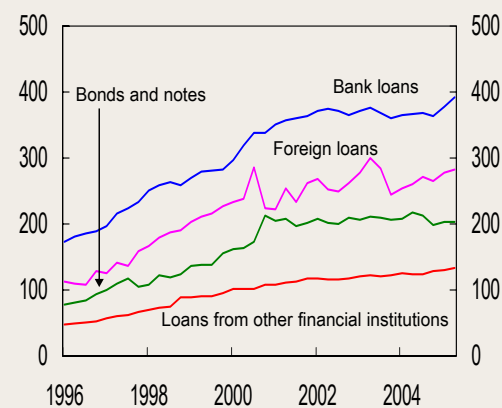
Chart 2.21 Dividend payments in non-financial public corporations¹⁾ Annual figures. 1988 – 2004



¹⁾ Except oil/gas, offshore, public sector and holding companies

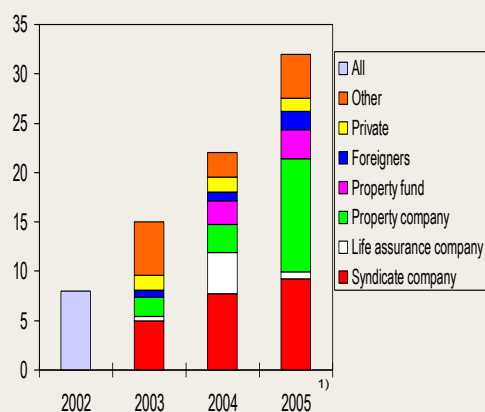
Source: Norges Bank

Chart 2.22 Non-financial enterprises' debt to other sectors. Stock. Billions of NOK. Quarterly figures. 96 Q1 – 05 Q2



Source: Norges Bank

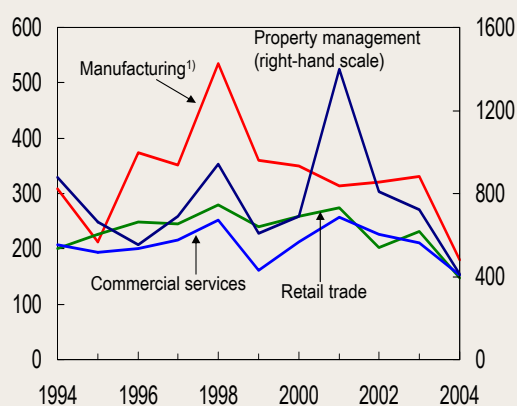
Chart 2.23 Total sales from commercial property in Norway distributed by investor type. Billions of NOK. 2002 – 2005



¹⁾ Annual projections based on actual figures at 2005 3Q

Sources: DnB NOR Næringsmegling and Norges Bank

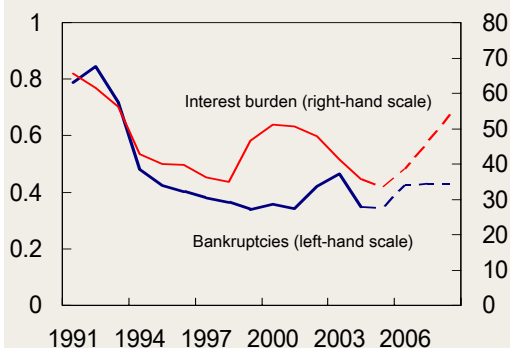
Chart 2.24 Pre-tax debt burden in selected industries. Per cent of cash surplus. Yearly figures. 1994 – 2004



¹⁾ Excluding mining

Source: Norges Bank

Chart 2.25 The share of enterprises going bankrupt in per cent and interest burden¹⁾ in non-financial enterprises²⁾. Yearly figures. 1991 – 2008³⁾



¹⁾ Interest expenses as a percentage of cash surplus. Cash surplus = value added – labour costs + net capital income

²⁾ Excluding oil and gas sector and shipping abroad

³⁾ Projections for 2005 - 2008

Sources: Statistics Norway and Norges Bank

Rental market prices for office premises are climbing. In centrally located areas, rental prices have increased in a number of cities, while developments have been somewhat weaker in peripheral areas. The vacancy rate for office premises is on the decline in all the largest cities.

Developments ahead

Sound profitability and low debt growth contributed to easing the debt burden in a number of industries in 2004 (see Chart 2.24). Enterprises' cash surplus is expected to increase more than their debt in 2005, thereby reducing the debt burden even further. The already low interest burden will fall further this year, but according to our projections may increase up to 2008 (see Chart 2.25). Bankruptcy projections based on a macroeconomic model⁵ show that the bankruptcy rate will remain fairly stable and at a moderate level over the next few years. In view of their improved financial strength and prospects of continued sound profitability, enterprises appear to be well positioned to absorb an increase in the interest burden. The risk associated with loans to the corporate market as a whole is relatively low and in the short term appears to be somewhat lower than six months ago.

In the longer term, there are a number of uncertainties. These are associated primarily with oil prices and other prices for Norwegian export goods. On the one hand, a fall in oil prices will reduce the profits and investments of oil companies. This will gradually dampen the activity and profitability of companies that deliver goods and services to oil companies. On the other hand, lower oil prices could lead to stronger economic growth abroad and hence increased demand for goods from Norwegian export industries. In isolation, this will improve corporate profitability. The profitability of industries exposed to international competition will also depend on cost developments. A further rise in oil prices or increased spending of petroleum revenues may contribute to a stronger krone exchange rate and erode competitiveness in relation to foreign companies. The introduction of a mandatory occupational pension will also increase costs. This will probably be offset to some extent by lower pay increases.

⁵ This model is described in a box in *Financial Stability* 1/05.

Macroeconomic gap indicators

In periods of economic expansion, a high level of optimism can push up both asset prices and investment and result in high credit growth. This may contribute to a build-up of financial imbalances. In the event of adverse economic events, optimism will wane, causing asset prices and investment to fall. The value of banks' loan collateral will diminish. Debt-servicing problems may also arise and banks' loan losses may increase. Recent studies have shown that macroeconomic indicators may signal the build-up of financial imbalances.¹

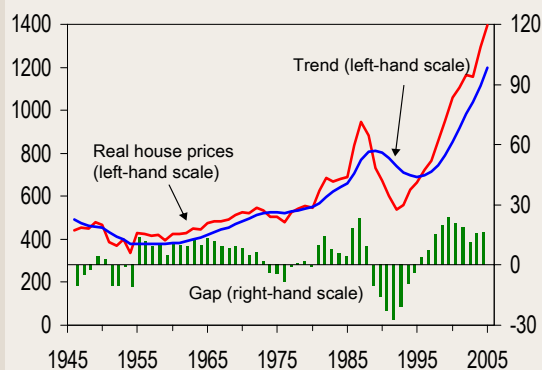
We have calculated the difference between actual observations and trend for real house prices, gross fixed investment and credit to households, non-financial enterprises and municipalities, the latter two as a percentage of GDP.² The indicators are mechanical calculations. The figures are influenced by the calculation method. The indicators may nevertheless function as a simple cross-check of the rest of the analysis in this report.

An analysis of Norwegian data shows that in the past these historical indicators have shown an increase prior to periods of financial instability.³ With few exceptions, the indicators show a common pattern, with a widening of the gaps from one to six years prior to a period of financial instability, and a subsequent narrowing. As a rule, at least two of the gap indicators have featured high values prior to periods of financial turbulence. Experience shows that a number of factors and events have played a part in triggering financial instability. A combination of indicators will therefore strengthen the analysis. International studies show that similar indicators also have good predictive properties for a number of other countries. We have therefore calculated values for the indicators up to 2005. The purpose is to determine whether the indicators suggest that imbalances in house prices, credit and investment are building up.

Chart 1 shows developments in the real house price gap. Measured by this method, house prices are now relatively high, but the real house price gap of 16% is somewhat lower than in the late 1980s. However, the indicator does not take account of developments in fundamental factors of importance to house prices, including low interest rates.

Charts 2 and 3 show developments in the credit gap and the investment gap. The vulnerability of the non-financial sector (households, non-financial enterprises and municipalities) will depend not only on debt growth, but also on the level of debt. Strong credit growth for a period of some years, from an initially low level, will not necessarily represent a threat to debt-servicing capacity. The situation

Chart 1 Real house prices¹⁾, index, 1819=100, and trend²⁾. Real house price gap. Per cent. 1946-2005



¹⁾ House price index deflated by consumer price index. Projections for 2005

²⁾ The trend is calculated using a Hodrick-Prescott filter and a recursive method on data for the period 1819-2005

Source: Statistics Norway and Norges Bank

will be different if credit growth is strong and the initial debt level is high. In order to take account of such effects, we use indicators for investment and credit in relation to GDP rather than growth rates over a shorter period of time.

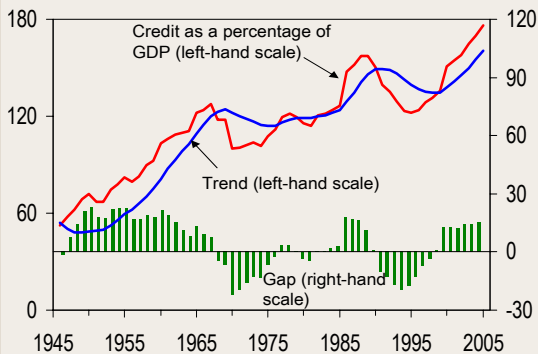
The calculated credit gap for 2005 is relatively wide, but still narrower than the peaks of earlier periods. The investment gap for 2005 is moderate in a historical context.

The gaps normally shrink rapidly from their high levels in periods of financial unrest. At the same time, the gaps may remain wide for a long period without the emergence of financial instability. The latter can be characterised as the exception rather than the rule. In the 1950s and 1960s, for example, both the house price gap and the credit gap were high, without leading to financial turbulence. There are a number of explanations for this. First, the housing and credit markets were regulated at that time. There were few banking crises interna-

tionally during this period since financial markets were regulated. Second, the 1950s and 1960s were characterised by stable macroeconomic developments.⁴ Third, the house price gap was somewhat narrower than the gap we associate with previous banking crises. Finally, the interest rate level was low during this period.

Imbalances build up over time. When disturbances occur in the economy, the financial system is put to the test. The system's ability to withstand the pressure depends, among other things, on the quality of banks' portfolios and on banks' capital adequacy. The analysis of gap indicators must therefore be supplemented by an analysis of the robustness of the banking sector. The gap indicators in the analysis show the vulnerability of the economy in general.

Chart 2 Credit as a percentage of GDP¹⁾ and trend²⁾. Credit gap. Percentage points. 1946-2005

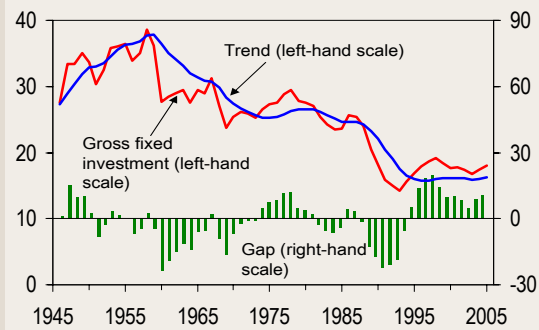


¹⁾ Total credit to municipalities, non-financial enterprises and households measured as a percentage of GDP. From 1995, total credit to mainland Norway as a percentage of mainland GDP (market value). Projections for 2005

²⁾ The trend is calculated using a Hodrick-Prescott filter and a recursive method on data for the period 1819-2005

Sources: Statistics Norway and Norges Bank

Chart 3 Gross fixed investment as a percentage of GDP¹⁾ and trend²⁾. Investment gap. Per cent. 1946-2005



¹⁾ Total gross fixed investment excl. changes in inventories/statistical deviations measured as percentage of GDP. From 1970, mainland gross fixed investment as a percentage of mainland GDP (market value). Projections for 2005

²⁾ The trend is calculated using a Hodrick-Prescott filter and a recursive method on data for the period 1819-2005

Sources: Statistics Norway and Norges Bank

¹ See Borio, Claudio and Philip Lowe (2002): "Asset prices, financial and monetary stability: exploring the nexus", *BIS Working Papers* No. 114.

² The analysis uses a Hodrick-Prescott filter and a recursive method for calculating the trend. A Hodrick-Prescott filter is a simple, technical method that assumes that a time series can be decomposed into a trend component and a cyclical component. The recursive method does not take into account developments in the variable after the year analysed. The method is the same as in Borio, Claudio and Philip Lowe (2002).

³ Riiser, Magdalena D. (2005): "House prices, equity prices, investment and credit – what do they tell us about banking crises? A historical analysis based on Norwegian data", *Economic Bulletin* 3/05, pp. 145-154, http://www.norges-bank.no/english/publications/economic_bulletin/2005-03/riiser.pdf

⁴ Steigum, Erling (2004): "Financial deregulation with a fixed exchange rate: Lessons from Norway's boom-bust cycle and banking crisis" in Thorvald G. Moe, Jon A. Solheim and Bent Vale (ed): *The Norwegian banking crisis, Norges Bank's Occasional Papers* No. 33, Oslo, pp. 23-76

3 | Financial institutions

The Norwegian banking sector has become more international in recent years (see box on page 40). Banks have also become more integrated with other financial institutions. Banking activities account for the bulk of most financial conglomerates' activities in Norway (see Table 12 in Annex 3).

This section focuses on a discussion and analysis of Norwegian banks and subsidiaries of foreign banks. Analyses of market conditions also include branches of foreign banks. Developments in other financial institutions are discussed when they have a bearing on banks and on financial stability in general.

3.1 Solid results and financial strength

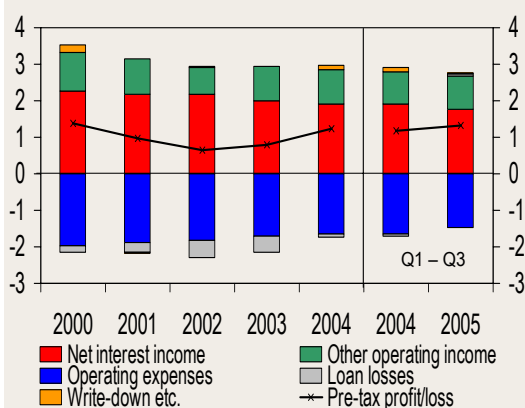
Bank results have been solid so far this year. Pre-tax profits are higher than in the same period last year (see Chart 3.1). The return on equity in the largest Norwegian banks has increased during the past year and is as high as the return on equity in the large Nordic financial conglomerates (see Table 7 in Annex 3).

The favourable results are largely due to very low loan losses and lower operating expenses. Lower loan losses are due in part to a marked reduction in the share of non-performing loans since 2003 Q2 (see Chart 3.2). In the first three quarters of 2005, reversals of previous loan loss provisions were larger than new loan losses. As a result, net income has been recorded under loan losses (see Chart 3.1). Increased use of automated services is an important factor behind the reduction in operating expenses.

Net interest income has become somewhat less important over the past ten years, but still accounts for roughly two-thirds of banks' total operating income. High lending growth has compensated for the falling interest margin, so that banks have been able to maintain net interest income measured in NOK (see Chart 3.3). As a share of average total assets, however, net interest income has fallen. Banks' income from payment services and commissions has risen somewhat in the past ten years (see Chart 3.4). These revenues show little variation from one year to the next and have contributed to more diversified sources of income for banks.

Competition in the banking sector has exerted pressure on bank charges, including charges for payment services. Some banks offer services free of charge to all customers, while in other banks charge-free services are reserved for loyalty customers. Loyalty customers must, however, pay a fixed fee to participate in customer loyalty programmes. This makes it more difficult for customers to compare prices for various services (see Norges Bank's *Annual Report on Payment Systems 2004*).

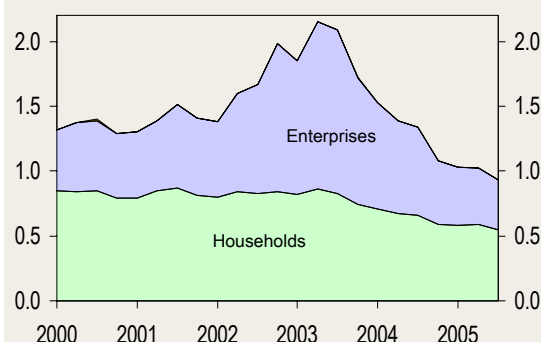
Chart 3.1 Banks¹⁾ profit/loss. Percentage of average total assets. Annual figures. 2000 – 2005



¹⁾ Excluding branches of foreign banks in Norway

Source: Norges Bank

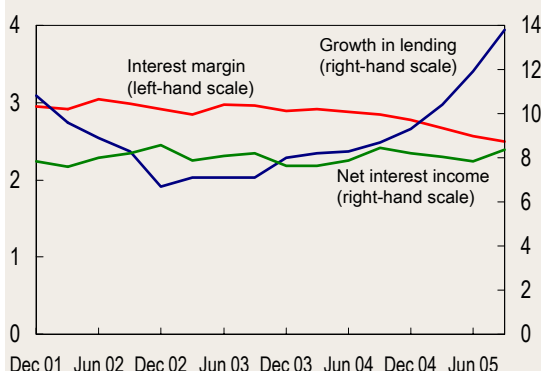
Chart 3.2 Banks¹⁾ gross stock of non-performing loans to households and enterprises. Percentage of gross lending to households, non-financial enterprises and municipalities. Quarterly figures. 00 Q1 – 05 Q3



¹⁾ All banks in Norway

Source: Norges Bank

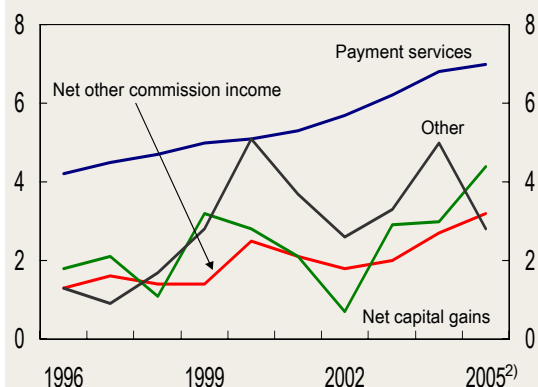
Chart 3.3 Banks¹⁾ interest margin and 12-month growth in lending to households, non-financial enterprises and municipalities in per cent. Quarterly net interest income in billions. 01 Q4 – 05 Q3



¹⁾ All banks in Norway

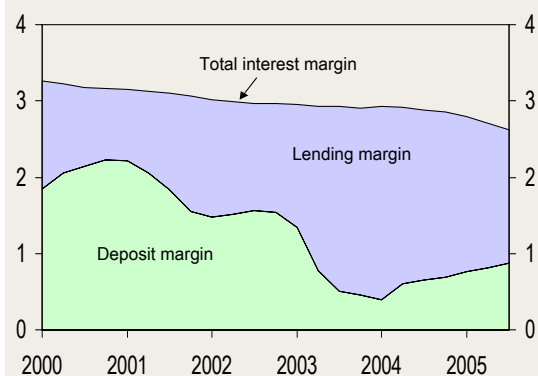
Source: Norges Bank

Chart 3.4 Banks¹⁾ other operating income. Billions of NOK. Annual figures. 1996 – 2005



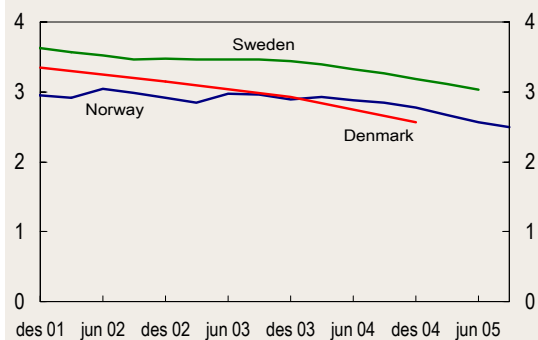
¹⁾ All banks in Norway
²⁾ The 2005 Q3 figures are annualised
 Source: Norges Bank

Chart 3.5 Banks¹⁾ deposit and lending margins, and total interest margin.²⁾ Per cent. Quarterly figures. 00 Q1 – 05 Q3



¹⁾ All banks in Norway
²⁾ Moving average over the past four quarters
 Source: Norges Bank

Chart 3.6 Banks¹⁾ interest margins in the Scandinavian countries. Per cent. Quarterly figures for Norway and Sweden. 01 Q4 – 05 Q3. Annual figures for Denmark. 2001 – 2004



¹⁾ All banks in Norway. The large banks in Sweden. About 50 of the largest banks in Denmark
 Sources: Sveriges Riksbank, Danmarks Nationalbank and Norges Bank

Banks' interest margin has fallen in recent years (see Chart 3.5),¹ in part because of strong growth in loans to the household sector. The margins on these loans are on average lower than on loans to enterprises. However, the difference between lending margins on loans to enterprises and loans to households has narrowed in the past two years (see Chart 3 in the Summary). The decline in lending margins on corporate loans reflects intensified competition among banks and solid results in the enterprise sector.

Money market rates fell sharply from the end of 2002 to a very low level in spring 2004. A similar reduction in deposit rates would have resulted in an average deposit rate of close to 0%. Therefore, there is a lower limit for deposit rates. This contributed to a fall in the deposit margin through 2003. On the other hand, the lending margin increased substantially in the same period. Norges Bank's key rate was 1.75% from March 2004 to June 2005. During the past half year, the key rate has been raised by a total of half a percentage point. In periods of rising money market rates, the notification rules in the Financial Contracts Act may exert temporary pressure on banks' lending margin. This is because the notification deadline for interest rate changes on loans is normally six weeks.

In all of the Scandinavian countries, banks' interest margins have fallen in recent years (see Chart 3.6). The interest margin in Norwegian banks is lower than in the largest banks in Sweden, but slightly higher than in Denmark. In Norway, banks are the dominant source of home mortgages, whereas in Denmark and Sweden, mortgages are largely provided by mortgage companies. Consequently, a considerable portion of the low-risk loans in these countries is provided by financial institutions other than banks. In isolation, this should indicate that we could expect somewhat lower interest margins in banks in Norway than in the other Scandinavian countries. In pricing payment services, more weight is given to the cost of producing the services in Norway than in Denmark and Sweden. Banks in these countries must cover these costs in other ways, for example through the interest margin. This also suggests that banks' interest margin could be lower in Norway than in Denmark and Sweden. Compared with the situation in Denmark, this indicates that competition may contribute to a further reduction in the interest margin in Norwegian banks.

The Tier 1 capital ratio for Norwegian banks as a whole has declined somewhat since the end of last year (see Chart 3.7). Nevertheless, financial strength is still solid. In isolation, strong growth in lending is weakening the Tier 1 capital

¹ The interest margin is defined as the average lending rate minus the average deposit rate. The interest margin is thus an indication of what banks earn from lending when loans are financed by deposits. The 3-month money market rate (NIBOR) is used to split the interest margin into lending margin and deposit margin. The lending margin is defined as the lending rate minus the money market rate, whereas the deposit margin is defined as the money market rate minus the deposit rate.

ratio. On the other hand, the higher share of mortgage loans in banks means that the basis for the capital requirement is growing at a slower pace than total assets since mortgage loans have a lower risk weight than loans to the corporate sector. The new Capital Accord, Basel II, will gradually enter into force from 2007. With Basel II, the risk weight for mortgage loans will be somewhat lower than at present. One explanation for the somewhat lower capital adequacy ratios may therefore be that banks are already adapting to Basel II.

3.2 Risk outlook for banks

Banks are exposed to various risks (see box in the margin). Only a small portion of Norwegian banks' total assets consists of assets that are directly exposed to market fluctuations. Of these, short-term shareholdings account for a very small portion. Norwegian banks' exposure to market risk is therefore considered to be relatively low. Banks' credit risk and liquidity risk are analysed below.

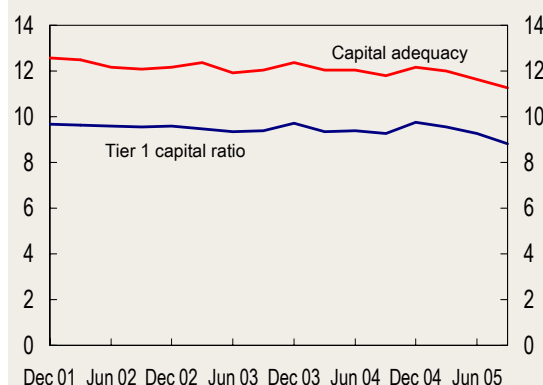
Credit risk

Loans to households, non-financial enterprises and municipalities account for more than three-quarters of banks' total assets. Credit risk is therefore the primary source of risk for banks. Growth in credit from domestic sources (C2) has been high for several years. Since the beginning of 2004, growth in credit from banks has been higher than growth in C2. One explanation may be higher growth in mortgage loans, which are primarily provided by banks, than in other types of loans.

Banks provide loans to the retail and the corporate markets. Loans to households that are self-employed are included in the corporate market. Strong growth in mortgage loans has led to an increase in the share of lending to the retail market of nearly 10 percentage points in the past five years (see Chart 3.8).

Credit risk associated with lending to the retail market depends on the type of loan. There is far less risk associated with a mortgage loan with a medium loan-to-asset value ratio than with an unsecured consumer loan. Since consumer loans are largely channelled through finance companies, mortgage loans account for the bulk of banks' lending to the retail market. As indicated in Section 2.2, households' overall financial situation is solid. Banks' credit risk associated with loans to the retail market is therefore considered to be relatively low in the near term.

Chart 3.7 Norwegian banks¹⁾ capital adequacy and Tier 1 capital ratio. Per cent. Quarterly figures. 01 Q4 – 05 Q3



¹⁾ Excluding branches of foreign banks

Source: Norges Bank

Types of risk

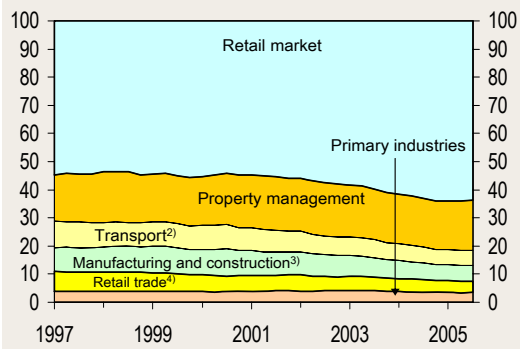
Credit risk: the risk of losses due to the inability of counterparties to meet their obligations, for example when a borrower does not pay interest and/or instalments.

Liquidity risk: the risk of substantial extra expenses due to loss of financing, i.e. the bank's lenders no longer being able or willing to extend credit to the bank, or to counterparties failing to fulfil their obligations at the right time.

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

Operational risk: the risk of losses due to operational disruptions, for example failures in computer systems or hardware, breaches of rules or fraud.

Chart 3.8 Distribution of banks¹⁾ lending to retail and corporate markets. Percentage of gross lending. Quarterly figures. 97 Q1 – 05 Q3

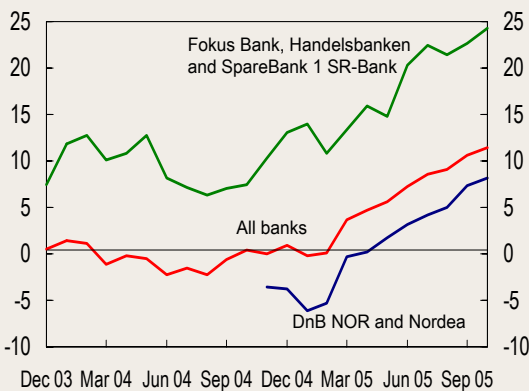


¹⁾ All banks in Norway
²⁾ Includes other services
³⁾ Includes electricity and water supply, mining and oil and gas production
⁴⁾ Includes hotel and restaurant
 Source: Norges Bank

Growth in bank lending to the corporate market has gained considerable momentum since *Financial Stability 1/05*. The rate of growth varies considerably, however, from one bank to another. Percentage growth in lending at the two largest banks, DnB NOR and Nordea, is considerably lower than at the three largest medium-sized banks (see Chart 3.9). DnB NOR and Nordea have a combined market share that is roughly three times larger than the combined market share of Fokus Bank, Handelsbanken and SpareBank 1 SR-Bank. This is one reason why the two largest banks have experienced a somewhat higher increase in the volume of lending to the corporate market than the other three banks in the past twelve months.

Bank lending to the corporate market accounts for about 36% of total lending to the retail and corporate markets (see Chart 3.8). The property management industry accounts for the largest share of bank lending to the corporate market. Growth in lending to this industry and to construction has picked up sharply in the past quarters (see Chart 3.10). Bank lending to manufacturing has continued to fall.

Chart 3.9 Growth in banks¹⁾ lending to the corporate sector. Twelve-month growth. Per cent. Monthly figures. Dec 03 – Oct 05



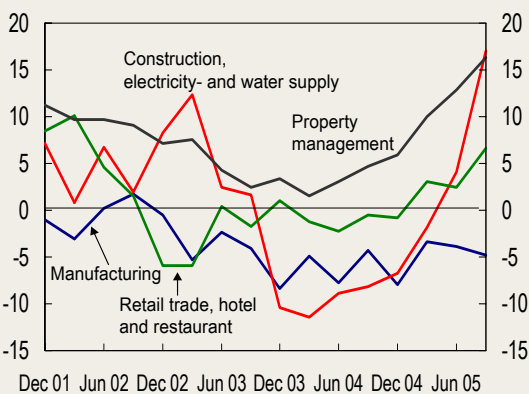
¹⁾ All banks in Norway
 Source: Norges Bank

Corporate profitability is solid (see Chart 2.15). The corporate market is considerably more heterogeneous than the retail market, and credit risk varies substantially across industries. Norges Bank's credit risk model SEBRA shows that the debt-weighted bankruptcy probability is falling in all major industries and is at a low level (see Chart 2.17). On the whole, credit risk associated with loans to the corporate market is still considered to be relatively low in the near term.

Liquidity risk

Banks' liquidity risk is related to the execution of payment settlements and to banks' funding.

Chart 3.10 Banks¹⁾ lending to selected industries. 4-quarter growth. Per cent. 01 Q4 – 05 Q3



¹⁾ All banks in Norway
 Source: Norges Bank

During the first three quarters of 2005, an average of NOK 155bn in payment transactions between banks participating in Norges Bank's settlement system (NBO) was settled daily. In this period, banks had an average of NOK 135bn in available liquidity in the settlement system at the beginning of the business day. This liquidity was composed of borrowing against pledged securities, NOK 104bn, and deposits in Norges Bank, NOK 31bn (see Chart 3.11). Turnover in NBO so far in 2005 is at approximately the same level as one year earlier. However, bank's average deposits and borrowing facilities are somewhat higher. Available liquidity has therefore become somewhat more ample in relation to the amount traded. A higher settlement volume is probably possible with the current level of liquidity without causing delays in settlement. The regulations concerning security for banks' loans from Norges Bank have been amended (see box on page 42).

There have been minor changes in banks' funding since *Financial Stability 1/05*. Funding in the bond market has increased in the past few years (see Chart 3.12). The deposit-to-loan ratio for both the retail and corporate markets is stable despite high lending growth, and growth in deposits is high even though interest rates are low. The liquidity indicator shows that with the exception of DnB NOR, Norwegian-owned banks have improved their liquidity in recent years (see Chart 3.13).² The liquidity indicator for DnB NOR has been at a high level throughout the period. Liquidity risk for the banking sector as a whole is relatively low.

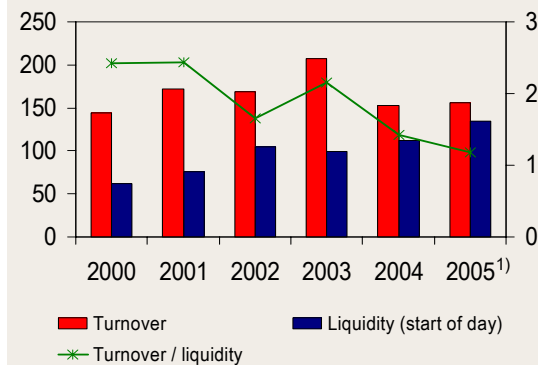
There is a risk that foreign investors will reduce funding to Norwegian banks more quickly and to a greater extent as a group than domestic investors in the event of weak developments in the Norwegian economy and financial sector. Short-term foreign debt is therefore considered to be a somewhat more unstable form of financing. On the other hand, it will be easier for banks to cope with periods of expensive and illiquid funding markets if they have access to several different financing sources and markets. This means that they must maintain their presence in foreign markets. DnB NOR has increased its short-term foreign debt so far this year (see Chart 3.14). Other Norwegian banks have reduced their short-term foreign debt further, to a low level. Nordea and Focus Bank are large operators in the Norwegian banking market but are not included in the chart because they are foreign-owned subsidiaries. These two banks are largely funded through their respective financial conglomerates.

3.3 Scenarios for banks

Projections based on technical assumptions can illustrate possible consequences for banks' results and capital adequacy under different scenarios. We have chosen to assess two paths for the interest margin and loan losses. The analysis comprises the five largest Norwegian banks (DnB NOR Bank, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 Midt-Norge and SpareBank 1 Nord-Norge) and is based on the following assumptions: Trend projections so far this year are assumed to apply for the rest of the year. Two scenarios for the interest margin and loan losses are considered for the projection period 2006-2008. The two scenarios are referred to here as the normal scenario and the crisis scenario.

² The liquidity indicator is defined as the ratio of stable sources of funding to illiquid assets. An increase in this ratio indicates a lower risk of liquidity problems. Deposits from households, non-financial enterprises and municipalities, bonds, subordinated loan capital and equity are considered to be stable financing. Banks' drawing facilities are not taken into account. Illiquid assets include: gross lending to households, non-financial enterprises and municipalities, other claims, assets acquired by recovery of claims, and fixed assets.

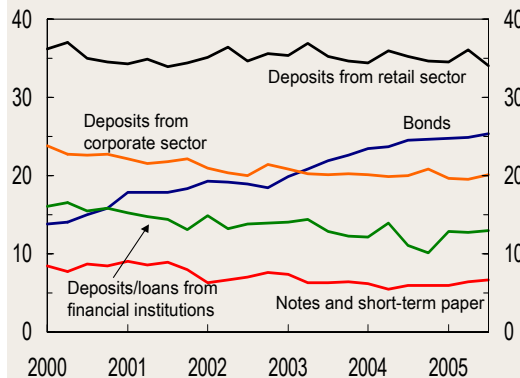
Chart 3.11 Average daily turnover and liquidity in Norges Bank's settlement system. In billions of NOK (left-hand scale) and as a ratio (right-hand scale). Annual figures. 2000 – 2005¹⁾



¹⁾ Q1 – Q3

Source: Norges Bank

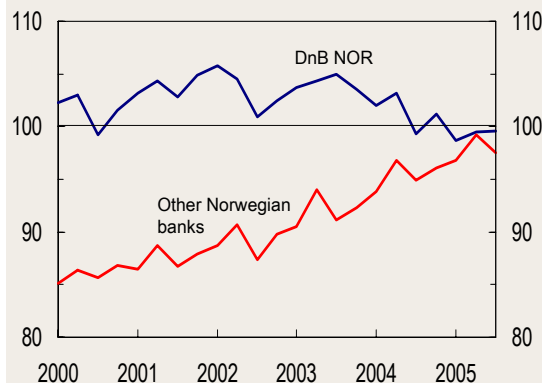
Chart 3.12 Norwegian banks¹⁾ financing. Percentage of gross lending. Quarterly figures. 00 Q1 – 05 Q3



¹⁾ All banks except branches and subsidiaries of foreign banks in Norway

Source: Norges Bank

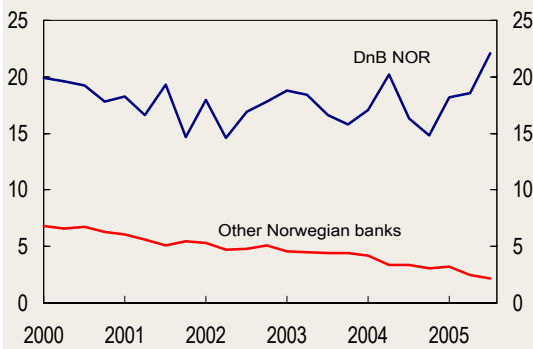
Chart 3.13 Developments in Norwegian banks¹⁾ liquidity indicator. Quarterly figures. 00 Q1 – 05 Q3



¹⁾ All banks except branches and subsidiaries of foreign banks in Norway

Source: Norges Bank

Chart 3.14 Norwegian banks¹⁾ short-term foreign debt.²⁾ Percentage of gross lending. Quarterly figures. 00 Q1 – 05 Q3

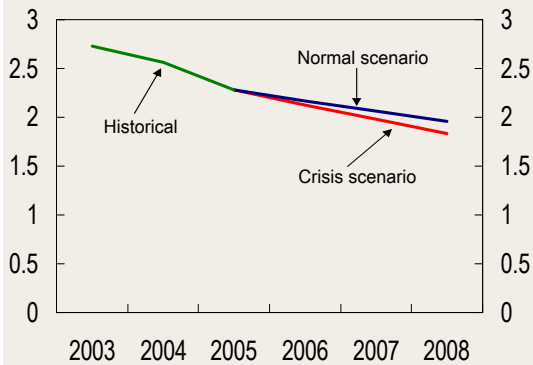


¹⁾ All banks except branches and subsidiaries of foreign banks in Norway

²⁾ Deposits and loans from other financial institutions and short-term paper

Source: Norges Bank

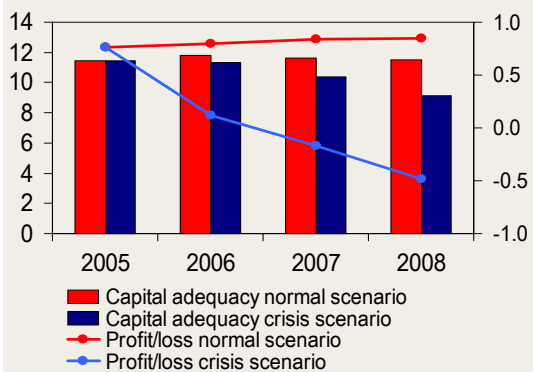
Chart 3.15 Developments in interest margin for the five largest Norwegian banks¹⁾ in two scenarios. Per cent. Annual figures. 2003 – 2008



¹⁾ DnB NOR Bank, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 Nord-Norge and SpareBank 1 Midt-Norge

Source: Norges Bank

Chart 3.16 Capital adequacy in per cent (left-hand scale) and profit/loss as a percentage of average total assets (right-hand scale) for the five largest Norwegian banks.¹⁾ Annual figures. 2005 – 2008



¹⁾ DnB NOR Bank, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 Nord-Norge and SpareBank 1 Midt-Norge

Source: Norges Bank

In the normal scenario, it is assumed that the interest margin will continue to fall, but that the annual fall in basis points will taper off (see Chart 3.15). Loan losses are assumed to increase to 0.3% of gross lending. Lending growth is expected to decline gradually in the years ahead. Projections for all other items are based on average growth trends over the past five years. This implies, among other things, that other operating income and other operating expenses are assumed to increase by 7% and 2% respectively per year.

Chart 3.16 summarises developments in profit/loss and capital adequacy in the normal scenario. Profits rise slightly through the projection period despite the fall in the interest margin. This reflects assumptions concerning strong growth in lending volume and other operating income. Capital adequacy is relatively stable during the projection period and remains well above the minimum requirement of 8%. The normal scenario thus indicates that overall developments in the five largest Norwegian banks will continue to be favourable.

In the crisis scenario, the interest margin is assumed to fall steadily through the projection period (see Chart 3.15). Loan losses as a share of gross lending are assumed to increase to 1.5% in 2006, 2.0% in 2007 and 2.5% in 2008. This is somewhat less than during the banking crisis, when the average loss as a share of gross lending was approximately 3% per year for the period 1990-1992. Otherwise, the assumptions are the same as in the normal scenario.

Profits fall sharply in the crisis scenario (see Chart 3.16). Capital adequacy also declines, but for the five banks as a whole capital adequacy remains above the minimum requirement of 8%. One of the banks, however, falls just below the requirement during the projection period. The analysis shows that banks are fairly well positioned to cope with unusually negative developments. Several factors indicate, however, that the situation in the crisis scenario is more critical than suggested by the figures in the chart. In the event of economic developments such as those in the crisis scenario, it is doubtful that banks will be able to obtain subordinated loan capital and other funding at the same pace as in the past few years. The scenarios only cover the period to the end of 2008. With a path as described in the crisis scenario, it is unlikely that 2009 will be a normal operating year. On the other hand, banks will not be passive bystanders to such developments. With loan losses of 1.5% in 2006, it is unlikely that banks will continue to reduce their interest margins markedly in 2007.

3.4 Other financial institutions

Mortgage companies offer long-term loans, primarily to the property market. At the end of October 2005, mortgage companies' overall lending to households, non-financial enterprises and municipalities was equivalent to 17.6% of bank's overall lending to this segment. Year-on-year growth in lending was 14.1% at the same time. Mortgage companies' profits were somewhat weaker in the first three quarters of 2005 than in the same period last year (See Table 9 in Annex 3).

Finance companies are a diverse group that serve a number of different markets. The main markets are leasing and car financing, card-based loans and consumer loans. At the end of October 2005, finance companies' total lending to households, non-financial enterprises and municipalities corresponded to 7.4% of banks' total lending to this segment. At the same time, year-on-year growth in lending was 16.9%. Finance companies on the whole posted somewhat better results measured in NOK in the first three quarters of 2005 than in the same period last year. As a share of average total assets, results were at the same level (see Table 10 in Annex 3).

Life insurance companies are more exposed to market risk than banks. 83% of these companies' total assets consist of fixed income instruments and equities, while property accounts for 10% (see Table 11 in Annex 3). Due to a low equity share, less than 16% of total assets at the end of 2004, combined with a foreign share of 67%, life insurance companies have only benefited to a limited degree from the strong equity price gains in Norway in 2005. The equity share at end 2005 Q3 was 18%, of which 63% was invested in foreign equities. More than half of life insurance companies' total assets is invested in bonds. Bonds classified as "hold to maturity" account for 29% of total assets. This share has fallen in the past two years as bonds have matured. Low long-term interest rates have made it more difficult for life insurance companies to achieve a return that meets the guaranteed minimum return promised to customers. Kredittilsynet (Norwegian Financial Supervisory Authority) can, however, reduce the technical interest rate on new pension earnings. Life insurance companies' buffer capital amounted to 6.9% of total assets at end 2005 Q3, which is 0.5 percentage point higher than at the beginning of the year.

3.5 Outlook ahead

Banks have achieved solid results in the past two years. This is mainly because loan losses have been very low, as a result of low interest rates, and robust growth in corporate and household income. Solid results and satisfactory capital adequacy mean that banks are well poised to cope with somewhat higher losses.

Average losses have probably declined somewhat because the share of mortgage loans in banks' lending portfolios has increased. Improved risk assessment may also contribute to keeping losses relatively low. Increased possibilities for risk management, for example by using credit derivatives, may further reduce banks' credit risk in the longer term. Lower average losses will, however, to some extent be offset by lower net interest margins because mortgage interest rates are lower than interest rates on other loans. Intensified competition may also contribute to reducing interest margins in the period ahead and exert downward pressure on underlying earnings.

Banks' liquidity risk and market risk are still considered to be relatively low. Credit risk is the most important risk facing Norwegian banks. It is considered to be relatively low in the near term for loans to both households and enterprises. Enterprises have solid profits and a high return on equity. Unusually high oil prices and high prices for other export goods are contributing to a positive outlook for some manufacturing sectors, while considerable optimism in the household sector is contributing to a favourable outlook for service enterprises.

As interest rates gradually normalise, bank losses must be expected to increase somewhat. The macroeconomic outlook, however, appears to be favourable. Output growth is expected to be high in the years ahead and unemployment is expected to fall. However, unforeseen disturbances may change this picture. Unexpected and abrupt changes in oil prices or a deterioration in competitiveness may weaken enterprises' profitability and debt-servicing capacity. The number of bankruptcies may also increase. This will also lead to an increase in unemployment, which would probably result in an increase in banks' losses on loans to the corporate and household sectors.

The household debt burden is now historically high and is still rising. As a result of unusually low interest rates, the interest burden is nevertheless low. In the somewhat longer term, and with continued debt accumulation, it is uncertain how household saving will be affected by an increase in interest rates or a reduction in income. If households use a larger portion of their income to service debt, demand for goods and services may fall. This will in turn reduce corporate profitability and may increase the risk of losses on loans to the corporate market.

Box: Foreign banks in Norway

Table 1 Market shares of foreign-owned banks. Percentage of all banks in Norway

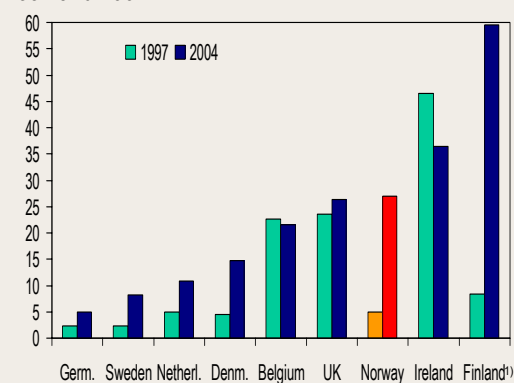
	Number		ATA ¹⁾		Deposits		Mortgages		Corp. loans	
	1997	2005	1997	2005	1997	2005	1997	2005	1997	2005
Subsidiaries	0.6	2.7	0.1	19.4	0.0	17.3	0.0	13.7	0.0	25.1
Branches	3.9	5.4	4.9	10.3	1.9	5.6	1.6	10.1	5.9	9.2

1) Average total assets
Source: Norges Bank

Over the past decade, the activities of foreign banks in Norway have expanded considerably (see Table 1). They were first established as subsidiaries, but were converted into branches as provided for under the EEA agreement in the mid-1990s. The EU action plan for the common internal market for financial services in the EEA area was launched in 1999, at about the time when growth in foreign-owned banks started to increase. There have been substantial changes in the Nordic countries, for example through Den Danske Bank's acquisition of banks in Sweden and Norway (Fokus Bank) and the establishment of Nordea, which now has activities in Sweden, Denmark, Finland and Norway. A number of other foreign banks have also established branches or subsidiaries in Norway.

substantial market shares in both the retail and the corporate market. At end-September 2005, year-on-year growth in lending by foreign-owned subsidiaries and branches stood at 17% and 27% respectively. Lending growth for Norwegian-owned banks was 11%. Competition for market positions may also engender an increase in lending growth for established banks and a decline in loan interest margins. As shown in Chart 3.5 (page 33), banks' *interest margin* has declined since the late 1990s. Competition from foreign banks and a generally lower interest rate level have contributed to this reduction. For a foreign bank, the diversification effect of having a certain amount of Norwegian lending will contribute to reducing the bank's overall risk. Foreign banks can therefore price their loans at a somewhat lower level.

Chart 1 Branches and subsidiaries of banks from other EEA countries. Percentage of total assets. 1997 and 2004



¹⁾ The sharp rise in Finland in 2004 is due to Nordea, which became a Finnish rather than Swedish registered bank

Sources: ECB and Norges Bank

At the end of the second quarter of 2005, there were 139 banks registered in Norway. Four of these were foreign-owned. In addition, eight foreign branches had been established. Foreign-owned banks and branches had a market share of almost 30% measured in terms of total assets at the end of 2005 Q2 (see Table 1). These banks have acquired

Increased competition can contribute to more efficient, customised banking operations, with a broader range of services, more niche banks and lower prices for borrowers and depositors. Market competition will probably increase due to the internet and electronic banking, which make it less costly to establish banks that serve the retail market. Niche banks, which target specific customer segments, have also been established. Niche banks may be cost-effective for both foreign banks and other operators that target specific customers.

The experience of financial crises in recent years shows that turbulence can spread rapidly among countries in international financial markets. At worst, this may deter foreign banks from acquiring exposure in countries with weak economic growth or other problems. The result is a lower supply of credit to these countries. Since the foreign-based market share is relatively high in Norway (see Chart 1), we are exposed to a reduction in foreign banks' activity in Norway. However, the advantage of a diversified portfolio, market development costs and reputation risk suggest that foreign-based banks

will also maintain their activities in markets where problems arise. Domestic crises may also lead to reduced activities abroad. For example, the banking crisis in Japan led to a marked reduction in Japanese banks' foreign activities at the beginning of the 1990s. During the banking crisis in Norway 15 years ago, there was a comparable reduction in Norwegian banks' foreign activities.

Norway has a relatively high percentage of foreign ownership in the banking sector. As a result, it is important to ensure that competitive conditions are level by harmonising the rules and regulations applying to banks in Norway with those in other countries. Efforts are being made to establish common international regulation and coordinated cross-border supervision to provide for a level playing field and prevent financial turbulence. The Basel Committee on Banking Supervision¹ has a key role in the work of developing international regulatory

and banking supervision standards. EU member states have harmonised regulation in a number of areas as part of the establishment of a common internal market. As a result of the EEA agreement, Norwegian financial legislation has been brought closely into line with EU legislation. However, a far higher deposit guarantee is required of Norwegian banks than is the general rule. The guarantee in Norway is NOK 2m per depositor, while the EU minimum level is EUR 20 000, which is equivalent to around NOK 160 000.²

¹ The Basel Committee on Banking Supervision consists of representatives of central banks and banking supervisory authorities from the G10 countries.

² See discussion in Norges Bank's submission of 30 September 2004 to the Ministry of Finance: "Submission – Regulation on membership of the Norwegian Bank Guarantee Fund for branches in Norway of foreign credit institutions whose head office is in another EEA member state".

Security for loans from Norges Bank: new guidelines

Norges Bank extends loans to banks against collateral in the form of securities. These loans are provided in connection with payment settlement and the implementation of monetary policy. Since the bond market in Norway is relatively small, Norges Bank has approved a broad range of securities as collateral. Norges Bank has thereby accepted a higher level of risk in its lending to banks than a number of other central banks.

In recent years, banks' available liquidity in Norges Bank – sight deposits and unutilised borrowing facilities – has increased more than borrowing requirements. This has made it possible for Norges Bank to adapt the guidelines for collateralisation so that they are more in line with guidelines in other countries.

Changes in the guidelines

The new guidelines became effective on 24 October 2005 and contain four important changes. First, a bank's borrowing rights will no longer be calculated on the basis of the nominal value of securities pledged as collateral, but on their market value. At the same time, haircut rates have been reduced.

Second, the credit rating requirement now also applies to Norwegian corporate bonds. However, the required rating is lower than for foreign bonds. In addition, the credit rating of the issuing institution is sufficient for Norwegian corporate bonds, whereas a credit rating of each security is required for foreign bonds. Furthermore, an exception has been made for bonds issued by Norwegian banks: these can be used as collateral even though no credit rating is available.

Third, the requirement that bonds from private Norwegian issuers should have a minimum volume outstanding of NOK 300m now also applies to bonds issued by Norwegian banks and mortgage companies owned by Norwegian banks. The same applies to the requirement that bonds are listed on a stock exchange or alternative marketplace.

Fourth, restrictions have been introduced on banks' rights to use bonds and notes issued by banks and mortgage companies owned by banks as security for loans from Norges Bank. Under the new guidelines, these kinds of securities may account for up to 35% of a bank's total collateral. Asset-backed bonds, however, will no longer be included in this quota. According to the new guidelines, a bank may pledge asset-backed bonds as collateral even if it owns the mortgage company that issued the bonds.

The credit rating requirement for asset-backed bonds issued by Norwegian mortgage companies and the requirement of a minimum volume for bonds issued by banks and mortgage companies will not be introduced until 1 November 2007.

Consequences

The guidelines concerning security for loans from Norges Bank are still fairly liberal. A large number of securities issued by either private or public borrowers in Norway or in other countries may be pledged by banks as collateral. Therefore, changes in the guidelines will probably not have a marked impact on banks' borrowing facilities in the long run. The immediate effect of the transition to the new guidelines on 24 October was that banks' total borrowing facilities increased by 10-15%.

The changes in the guidelines may, however, affect the costs of borrowing in the debt securities market. Some securities will no longer be approved as collateral in Norges Bank, which may result in a decline in demand for these securities. This particularly applies to securities issued by enterprises with low or no credit rating and securities issued by banks with a low outstanding volume. The effect on borrowing costs will, however, be limited since banks' use of these securities as collateral only accounts for an average 10-15% of the volume issued. In addition, many enterprises will be able to achieve a satisfactory credit rating. A credit rating involves some costs, but could permit the continued use of bonds as collateral.

Annex 1: Earlier boxes 2001-2005

2/2005

Are equity prices more volatile in Norway than in other countries?

Developments in house prices

Distribution of household debt, income and financial assets

Macroeconomic gap indicators

Foreign banks in Norway

Security for loans from Norges Bank: new guidelines

1/2005

Risk premiums in the equity market

What influences the number of bankruptcies?

Small enterprises more exposed to risk than large enterprises

Loans to households other than mortgage loans

Risk associated with loans to various industries

Banks' financial position is more robust today than prior to the banking crisis

2/2004

Derivatives markets are expanding

Use of a central counterparty in the settlement of financial instruments

Is there a connection between house prices and banking crisis?

Relationship between the results of companies listed in the Oslo Stock Exchange and of the Norwegian enterprise sector as a whole

How do enterprises hedge against exchange rate fluctuations?

Risk associated with loans to small enterprises and the new capital adequacy framework

Norges Bank's role in the event of liquidity crisis in the financial sector

1/2004

How Norwegian is the Oslo Stock Exchange?

Fixed-interest mortgages

What drives house prices?

Predictions with two credit risk models

Loan loss provision rate and loan losses

A more robust securities settlement system

2/2003

Global house prices and credit growth

Market-based indicators of banks' financial position

Effects of a fall in household consumption on the enterprise sector

Merger of Den norske Bank and Gjensidige NOR – effect on financial stability

Nordic agreement on the handling of financial crisis

Inclusion of the Norwegian krone in CLS

Economic shocks, monetary policy and financial stability

1/2003

The effect of fall in share prices on pension schemes

The P/E ratio for the Norwegian stock market

Indicators of the price level in the housing market

The Basel committee's work in the field of operational risk

Credit risk in connection with banks' lending to the corporate sector

Banking crisis in Norway have followed periods of high debt growth

2/2002

Some spillover effects in the financial sector of the fall in equity prices

Commercial property market

Market values and the risk of bankruptcy

Norwegian banks' counterparty exposure

Risk pricing in Norwegian banks

1/2002

Implications of the Enron bankruptcy

Japanese banks increasingly vulnerable

Household debt burden by category of household income

How vulnerable are financial institutions to macro-economic changes?

Counterparty exposure – monitoring systemic risk

The liquidity trend in banks

2/2001

Terrorist attacks in the US – immediate effects on the financial sector

Indicators of price levels in the stock market

Enterprise investment and financing

Operational risk

Continuous Linked Settlement (CLS)

Counterparty exposure

Breakdown of loan losses and loss provisioning practices

1/2001

Nordic financial stability

The market view of future uncertainty – information from option prices

The credit risk model

Lending margins – a measure of competition intensity?

Annex 2: Other published material on financial stability at Norges Bank

Articles and books dealing with financial stability issues, written by researchers and economists at Norges Bank and published since the previous *Financial Stability* report are presented below in summarised form. The conclusions and views expressed in signed articles are the author's own and are not necessarily those of Norges Bank.

Norges Bank's role in the event of liquidity crises in the financial sector

Economic Bulletin June 2005 (No. 2)

Author: Karsten R. Gerdrup

Central banks can supply extraordinary liquidity to an individual bank or the banking system when demand for liquidity cannot be met from other sources. This role has changed over time for Norges Bank. In the course of the past 30 years, the stance on extending loans on special terms (S-loans) to banks has become more restrictive. The Executive Board's most recent review of the Bank's role as lender of last resort (LLR), in March 2004, confirms that extraordinary provision of liquidity should be reserved for situations in which financial stability may be threatened without such support.

Are unexpected loan losses lower for small enterprises than for large enterprises?

Economic Bulletin October 2005 (No. 3)

Authors: Kai Larsen and Kristin M. Bjerkeland

Unexpected loan losses have been lower for loans to small- and medium-sized enterprises (SMEs) than for those to large enterprises in about 2/3 of the period reviewed. In the remaining period, including two of the years during the banking crisis, unexpected losses were higher for loans to SMEs. Under the Basel II framework, the capital requirements for loans to SMEs have been reduced. The article does not take a concrete position on this discount. The results of the analysis indicate, however, that a SME discount cannot necessarily be rejected.

Currency hedging in Norwegian non-financial firms

Economic Bulletin October 2005 (No. 3)

Authors: Øystein G. Børsum and Bernt Arne Ødegaard

The article summarises the results of a survey conducted by Norges Bank in summer 2004. The survey focused on the use of currency derivatives by Norwegian enterprises, but also posed more general questions regarding hedging. The survey shows that nearly all companies with foreign exchange exposure use one or more forms of currency hedging. The use of currency derivatives is to a large extent geared towards short-term hedging. The results that are comparable with international surveys show that Norway is on a par with the rest of the world.

House prices, equity prices, investment and credit – what do they tell us about banking crises? A historical analysis based on Norwegian data

Economic Bulletin October 2005 (No. 3)

Author: Magdalena D. Riiser

Using a Hodrick-Prescott filter, the gap between actual observations and trend for real house prices, real equity prices, gross fixed investment and credit is calculated on the basis of Norwegian data back to 1819. With few exceptions, the gap indicators show a common pattern - the gaps widen from one to six years prior to the banking crises and subsequently fall. The article also finds that indicator values that can be associated with a banking crisis, i.e. the threshold values, may be somewhat higher in Norway than in comparable international studies.

Annex 3: Statistics

Table 1 Corporate sector¹⁾ balance sheet

	NOK billion		Per cent of total assets	
	2003	2004 ²⁾	2003	2004
Intangible assets	136	114	3.4	2.6
Fixed assets	1,171	1,213	29.6	27.9
Financial fixed assets	1,451	1,680	36.7	38.7
Total fixed assets	2,759	3,007	69.8	69.2
Inventories	158	165	4.0	3.8
Current receivables	687	779	17.4	17.9
Bank deposits, cash and current investments	351	392	8.9	9.0
Total current assets	1,195	1,336	30.2	30.8
Total assets	3,954	4,343	100.0	100.0
Paid-in equity	891	1,021	22.5	23.5
Retained earnings	538	568	13.6	13.1
Total equity	1,429	1,589	36.1	36.6
Provisions	241	256	6.1	5.9
Long-term loans in credit institutions and bonds	409	414	10.3	9.5
Other long-term debt	781	833	19.8	19.2
Total long-term debt	1,431	1,504	36.2	34.6
Short-term loans in credit institutions and short-term paper	80	72	2.0	1.7
Accounts payable	177	187	4.5	4.3
Tax payable and government taxes due	137	159	3.5	3.7
Dividend	112	181	2.8	4.2
Other current liabilities	588	651	14.9	15.0
Total current liabilities	1,094	1,250	27.7	28.8
Total equity and liabilities	3,954	4,343	100.0	100.0

¹⁾ Limited companies excluding enterprises in the financial industry and public sector

²⁾ Not adjusted for annual accounts not available in 2004

Source: Norges Bank

Table 2 Key figures for limited companies in selected industries. ¹⁾ Per cent

	Share of bank debt ²⁾		Operating margin ³⁾		Return on total assets ⁴⁾		Equity ratio ⁵⁾		Predicted bankruptcy probability ⁶⁾ Median		Risk-weighted debt as a percentage of debt to banks ⁸⁾	
	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Agriculture and forestry	0.3	0.4	4.5	5.9	11.9	12.5	45.3	47.9	0.5	0.5	3.7	2.6
Fishing	3.1	3.2	3.8	13.1	1.8	6.7	18.5	20.2	1.3	0.9	6.0	3.9
Fish-farming	2.2	2.0	-10.5	2.9	-9.5	8.5	23.1	27.6	1.5	1.2	5.9	5.0
Mining	0.5	0.4	10.6	18.8	12.7	18.0	40.9	42.6	0.4	0.4	2.1	2.2
Manufacturing	13.7	13.0	3.9	4.7	5.5	8.7	39.6	41.7	0.5	0.4	2.6	2.1
Utilities	3.8	4.2	12.0	13.2	6.3	7.0	47.2	49.2	0.1	0.1	0.8	0.6
Construction	2.2	2.5	3.6	4.9	9.0	10.9	24.4	22.5	0.5	0.5	2.8	2.5
Retail trade	8.9	8.8	2.8	3.5	8.9	11.1	30.7	29.1	0.6	0.5	3.2	2.8
Hotels, restaurants and tourism	1.5	1.4	0.9	2.1	2.2	7.3	16.9	18.0	1.6	1.4	9.5	8.8
Domestic shipping	4.7	4.4	10.2	5.3	5.8	4.3	40.1	41.2	0.3	0.3	1.7	1.0
Other shipping	7.6	6.7	4.8	6.7	6.0	11.3	51.0	47.1	0.4	0.3	1.2	1.0
Other transport	3.8	3.9	4.4	5.8	4.5	5.6	26.6	27.2	0.4	0.4	1.7	1.6
Telecoms and IT	0.6	0.6	8.3	10.1	8.6	9.5	35.7	37.7	0.6	0.5	2.9	2.5
Property management	39.3	40.4	33.8	37.4	8.7	11.4	32.4	32.7	0.2	0.2	0.9	0.7
Commercial services	7.7	7.9	4.8	7.3	8.4	12.1	32.4	32.5	0.3	0.3	1.7	1.4
Total	100.0	100.0	5.1	6.3	7.0	9.7	36.8	37.1	0.4	0.4	2.2	1.9

¹⁾ Adjusted for accounts not available in 2004

²⁾ The industry's share of total bank debt for selected industries

³⁾ Operating result as a percentage of turnover

⁴⁾ Total return before tax and interest on debt as a percentage of total assets at year-end

⁵⁾ Equity as a percentage of total assets

⁶⁾ Bankruptcy probabilities predicted by Norges Bank's bankruptcy prediction model

⁷⁾ The 80 percentile represents the enterprise that is positioned such that 20% of enterprises have a higher bankruptcy probability and 80% a lower bankruptcy probability

⁸⁾ Risk-weighted debt per industry (bankruptcy probability multiplied by the bank debt of each enterprise totalled for all enterprises in the industry) in per cent of the industry's debt to banks. Can be interpreted as debt-weighted bankruptcy probability

Source: Norges Bank

Table 3 Wealth and debt of households. In billions of NOK

	June 2004	June 2005
Bonds and short-term paper	30	31
Equities and primary capital certificates	172	205
Securities funds	82	93
Insurance claims	597	670
Bank deposits	561	603
Other	247	276
Gross financial assets	1,689	1,877
- Gross debt	1,301	1,446
Net financial assets	388	431
<i>Memorandum:</i>		
Gross financial assets excluding insurance claims	1,092	1,207

Source: Norges Bank

Table 4 Structure of the Norwegian financial industry.¹⁾ As at 30 September 2005

	Number	Lending (NOK bn)	Total assets (NOK bn)	Tier 1 capital ratio (%)	Capital adequacy (%)
Banks (excluding branches of foreign banks in Norway)	139	1,371.1	1,882.1	8.8	11.3
Branches of foreign banks	9	92.4	204.2		
Mortgage companies	13	248.5	404.2	9.7	12.5
Finance companies	48	108.5	118.6	9.0	11.0
Life insurance companies	11*	17.6	583.5	9.4	12.5
Non-life insurance companies	46	1.4	128.9	36.1	36.4

¹⁾ of which 5 unit-link companies

<i>Memorandum:</i>	(NOK billion)
Market value of equities, Oslo Stock Exchange	1,361.3
Outstanding domestic bonds and short-term paper debt	714.1
Issued by public sector and state-owned companies	318.0
Issued by banks	250.4
Issued by other financial institutions	65.4
Issued by other private enterprises	53.0
Issued by non-residents	27.4
GDP Norway, 2004	1,688.0
GDP mainland Norway, 2004	1,306.6

¹⁾ Branches of foreign financial institutions are included if other is not specified

Sources: Norges Bank, Oslo Stock Exchange and Statistics Norway

Table 5 Results and capital adequacy in Norwegian banks in selected quarters ¹⁾

	2004 Q3		2004 Q4		2005 Q1		2005 Q2		2005 Q3	
	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA
Net interest income	8.09	2.01	7.84	1.93	7.68	1.83	7.61	1.74	7.98	1.75
Other operating income	3.35	0.83	4.59	1.13	3.44	0.82	4.26	0.97	4.10	0.90
commission income	2.28	0.57	2.38	0.59	2.20	0.52	2.38	0.54	2.51	0.55
securities, foreign exchange and derivatives	0.76	0.19	1.91	0.47	1.02	0.25	1.60	0.36	1.28	0.28
Other operating expenses	6.41	1.59	6.82	1.68	6.32	1.51	6.47	1.47	6.46	1.42
personnel expenses	3.38	0.84	3.68	0.90	3.46	0.82	3.40	0.77	3.55	0.78
Operating result before losses	5.02	1.25	5.61	1.38	4.79	1.14	5.40	1.23	5.62	1.24
Losses on loans and guarantees	0.25	0.06	0.25	0.06	0.18	0.04	-0.77	-0.18	-0.39	-0.09
Pre-tax operating profit	4.93	1.22	5.76	1.42	4.94	1.18	6.21	1.42	6.07	1.34
Profit after taxes	3.89	0.96	4.44	1.09	3.72	0.89	4.65	1.06	4.56	1.00
Capital adequacy (%)	11.81		12.16		12.02		11.63		11.27	
Tier 1 capital ratio (%)	9.27		9.76		9.56		9.27		8.80	

¹⁾ All banks with the exception of branches of foreign banks in Norway. Result figures as a percentage of average total assets (ATA) are annualised

Source: Norges Bank

Table 6 Results and capital adequacy in Norwegian banks ¹⁾

	2002		2003		2004		2004 Q1-Q3		2005 Q1-Q3	
	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA	NOK bn	% ATA
Net interest income	30.72	2.19	30.14	1.99	30.71	1.91	22.87	1.91	23.26	1.77
Other operating income	10.21	0.73	14.31	0.94	15.16	0.94	10.57	0.88	11.80	0.90
commission income	7.09	0.51	7.63	0.50	8.82	0.55	6.43	0.54	7.09	0.54
securities, foreign exchange and derivatives	1.95	0.14	5.69	0.37	4.86	0.30	2.95	0.25	3.91	0.30
Other operating expenses	25.49	1.82	25.86	1.70	26.56	1.65	19.74	1.65	19.25	1.47
personnel expenses	13.26	0.95	13.81	0.91	13.77	0.86	10.09	0.84	10.40	0.79
Operating result before losses	15.45	1.10	18.59	1.22	19.31	1.20	13.70	1.14	15.81	1.21
Losses on loans and guarantees	6.66	0.47	6.89	0.45	1.25	0.08	1.00	0.08	-0.98	-0.07
Pre-tax operating profit	8.92	0.64	12.02	0.79	19.78	1.23	14.02	1.17	17.23	1.31
Profit after taxes	6.26	0.45	9.41	0.62	14.79	0.92	10.35	0.86	12.93	0.99
Capital adequacy (%)	12.15		12.36		12.16		11.81		11.27	
Tier 1 capital ratio (%)	9.60		9.72		9.76		9.27		8.80	

¹⁾ All banks with the exception of branches of foreign banks in Norway

Source: Norges Bank

Table 7 Nordic financial groups' rating by Moody's, ¹⁾ total assets, capital adequacy²⁾ and return on equity³⁾ as of 2005 Q3

	Financial strength	Short term	Long term	Total assets (NOK bn)	Tier 1 capital ratio (%)	Capital adequacy (%)	Return on equity	
							2004	2005 Q1-Q3
Danske Bank	A-	P-1	Aa1	2,532.3	6.5	9.4	17.4	17.8
Nordea Bank AB	B	P-1	Aa3	2,522.1	7.0	9.9	16.9	18.6
SEB	B	P-1	Aa3	1,544.4	7.8	10.1	14.7	16.5
Svenska Handelsbanken	A-	P-1	Aa1	1,256.1	7.4	9.9	16.6	17.1
FöreningsSparbanken (Swedbank)	B	P-1	Aa3	979.4	6.5	9.9	21.8	27.3
Nordea Bank Norway	B-	P-1	Aa3	323.7	8.2	10.6	13.1	18.6
Fokus Bank ⁴⁾	C	P-1	Aa2	96.1	7.2	8.9	10	14
DnB NOR	B	P-1	Aa3	1,040.7	7.4	10.4	17.7	19.5
Sparebank 1 SR-Bank	C+	P-1	A2	65.8	8.4	11.4	20.1	23.8
Sparebanken Vest	C	P-2	A3	52.7	9.0	11.1	12.0	15.7
Sparebank 1 Midt-Norge	C	P-2	A3	50.2	8.8	11.2	20.0	22.8
Sparebank 1 Nord-Norge	C	P-2	A3	46.3	8.8	10.3	16.8	19.3

¹⁾ Moody's scale of rating: Financial strength: A+, A, A-, B+, B, B-, C+, C, C-,... Short term: P-1, P-2,... Long term: Aaa, Aa1, Aa2, Aa3, A1, A2,...

²⁾ Banks vary in the extent to which the result of 2005 Q1-Q3 in the capital base is included when computing capital adequacy ratios

³⁾ Return on equity for the period 2005 Q1-Q3 is not strictly comparable to the figures for 2004 for all the groups because of changes in accounting standards (IFRS) as from 2005

⁴⁾ Return on equity for Fokus Bank includes all of Danske Bank's bank activities in Norway

Sources: Financial groups' websites and Moody's

Table 8 Balance sheet structure, Norwegian banks. ¹⁾ Percentage distribution

	2004	2004 Q3	2005 Q3
Cash and deposits	3.8	3.4	6.0
Securities (trading book)	9.5	9.5	9.1
Gross lending to households, municipalities and non-financial enterprises	75.7	75.9	72.9
Other lending	8.3	8.4	9.3
Total loan loss provisions	-1.1	-1.2	-0.8
Fixed and other assets	3.8	4.1	3.5
Total assets	100.0	100.0	100.0
Customer deposits	49.0	48.2	46.1
Deposits/loans from domestic financial institutions	3.6	3.9	3.8
Deposits/loans from foreign financial institutions	7.9	8.1	11.8
Deposits/loans from Norges Bank	0.1	0.1	0.0
Other deposits/loans	2.5	2.6	3.0
Notes and short-term paper	4.6	4.7	5.1
Bond debt	18.7	18.8	18.0
Other liabilities	3.9	4.1	3.2
Subordinated loan capital	2.4	2.4	2.4
Equity	7.3	7.2	6.5
Total equity and liabilities	100.0	100.0	100.0
<i>Memorandum:</i>			
Total assets (NOK billion)	1,632.8	1,599.4	1,882.1

¹⁾ All banks with the exception of branches of foreign banks in Norway

Source: Norges Bank

Table 9 Balance sheet structure and profit/loss, mortgage companies

	2004	2004 Q3	2005 Q3
Balance sheet. Percentage distribution			
Cash and deposits	0.6	1.3	2.0
Securities (trading book)	16.4	18.5	18.7
Gross lending:			
Repayment loans (> 1 year)	81.4	78.9	77.8
Loan loss provisions	-0.1	-0.1	-0.1
Fixed and other assets	1.6	1.4	1.6
Total assets	100.0	100.0	100.0
Notes and short-term paper	2.0	7.6	1.7
Bond debt	58.8	53.0	60.9
Loans	32.7	33.0	31.4
Other liabilities	1.5	1.4	2.1
Subordinated loan capital	1.4	1.3	1.2
Equity	3.6	3.7	3.6
Total equity and liabilities	100.0	100.0	100.0
Profit/loss. Percentage of ATA (annualised)			
Net interest income	0.54	0.55	0.47
Operating expenses	0.12	0.14	0.13
Losses on loans and guarantees	-0.02	0.00	-0.01
Pre-tax operating profit	0.43	0.44	0.37
<i>Memorandum:</i>			
Total assets (NOK billion)	360.2	352.2	404.2

Source: Norges Bank

Table 10 Balance sheet structure and profit/loss, finance companies

	2004	2004 Q3	2005 Q3
Balance sheet. Percentage distribution			
Cash and deposits	2.2	2.1	1.8
Securities (trading book)	0.1	0.2	0.2
Gross lending:			
Discount credit, bank overdraft facility, operating credit, user credit	15.4	16.4	13.4
Other building loans	0.1	0.2	0.1
Repayment loans (> 1 year)	39.3	38.3	40.0
Loan financing (> 1 year)	41.7	41.6	42.9
Loan loss provisions	-1.5	-1.8	-1.2
Fixed and other assets	2.9	3.1	2.8
Total assets	100.0	100.0	100.0
Notes and short-term paper	-	1.0	2.0
Bond debt	0.6	0.6	0.2
Loans	83.9	83.3	84.0
Other liabilities	5.4	5.8	5.0
Subordinated loan capital	1.2	1.3	1.1
Equity	8.9	9.0	9.6
Total equity and liabilities	100.0	100.0	100.0
Profit/loss. Percentage of ATA (annualised)			
Net interest income	4.28	4.28	4.37
Operating expenses	3.64	2.98	3.72
Losses on loans and guarantees	0.58	0.61	0.35
Pre-tax operating profit	2.04	2.12	2.35
<i>Memorandum:</i>			
Total assets (NOK billion)	108.3	104.1	118.6

Source: Norges Bank

Table 11 Balance sheet structure and profit, life insurance companies¹⁾

	2004	2004 Q3	2005 Q3
Balance sheet. Selected assets as a percentage of total assets			
Buildings and real property	9.9	9.4	9.6
Investment for permanent ownership etc.	36.8	39.4	35.2
of which equities and units	0.5	0.6	0.5
of which bonds held until maturity	32.5	35.0	29.0
of which lending	3.7	3.8	3.3
Other financial assets	48.2	45.5	53.9
of which equities and units	15.7	14.2	18.4
of which bonds	24.0	24.1	24.5
of which short-term paper	6.7	4.6	7.5
Profit/loss. Percentage of ATA (annualised)			
Premium income	11.77	11.51	11.79
Net income from financial assets	6.64	5.86	7.82
Result before allocations to customers and tax	2.45	2.31	2.73
Value-adjusted result before allocations to customers and tax	3.17	2.33	4.43
<i>Memorandum:</i>			
Buffer capital (percentage of total assets)	6.4		6.9
Total assets (NOK billion)	509.0	498.5	555.9

¹⁾ Excluding life insurance companies offering unit-linked products

Source: Kredittilsynet (The Financial Supervisory Authority of Norway)

Table 12 Total assets in Norwegian financial groups by line of business as at 30 September 2005.¹⁾
Per cent

	Banks	Finance companies	Mortgage companies	Life insurance	Total group
DnB NOR (including Nordlandsbanken)	79.1	2.0	1.7	17.1	100.0
Nordea Norway	84.5	1.9	5.6	8.0	100.0
Sparebank 1 alliance ²⁾	93.1	1.5	0.0	5.4	100.0
Storebrand	16.3	0.0	0.0	83.7	100.0
Fokus Bank/Danske Bank branch	74.1	0.0	25.9	0.0	100.0
Terra alliance ³⁾	98.6	0.5	0.9	0.0	100.0

¹⁾ "Total group" 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 groups. For example, unit-linked insurance, securities funds and asset management have been excluded

²⁾ The Sparebank 1 alliance comprises Sparebank 1 Gruppen AS and the 18 Norwegian banks that own the group

³⁾ The Terra alliance comprises Terra Gruppen AS and the 80 banks that own the group

Source: Norges Bank

Table 13 Norwegian financial groups' market shares in various lines of business as at 30 September 2005.¹⁾ Per cent

	Banks	Finance companies	Mortgage companies	Life insurance	Total group
DnB NOR (including Nordlandsbanken)	38.4	18.0	4.6	32.5	32.3
Nordea Norway	14.3	5.9	5.0	5.1	11.2
Sparebank 1 alliance ²⁾	11.5	3.3	0.0	2.5	8.2
Storebrand	1.4	0.0	0.0	26.6	5.6
Fokus Bank/Danske Bank branch	4.8	0.0	8.6	0.0	4.2
Terra alliance ³⁾	5.7	0.5	0.3	0.0	3.8
Total financial groups	76.0	27.7	18.4	66.7	65.2

¹⁾ Market shares are based on the total assets in the various lines of business. "Total financial groups" is equivalent 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 of Norwegian financial groups. For example, unit-linked insurance, securities funds and asset management have been excluded

²⁾ The Sparebank 1 alliance comprises Sparebank 1 Gruppen AS and the 18 Norwegian banks that own the group

³⁾ The Terra alliance comprises Terra Gruppen AS and the 80 banks that own the group

Source: Norges Bank

Table 14 Key figures and indicators

	Average				Projections		
	1987-1993	1994-2004	2004	2005 Q2	2005	2006	2007-2008
Households							
Interest burden ¹⁾	9.9	5.9	4.7	4.2	4.3	4.9	6.5
Debt burden ²⁾	153	135	165	174	175	187	203
Borrowing rate after tax ³⁾	8.3	5.0	3.0	2.7	2.8	3.2	4.0
Real interest rate after tax ⁴⁾	4.0	3.2	2.6	1.7	1.8	1.4	1.7
Net financial wealth to income ratio ⁵⁾	9	49	48	51			
Unemployment (registered)	4.5	3.4	3.6	3.4	3½	3¼	3¼
Enterprises							
Interest burden ⁶⁾	63	43	36		34	39	51
Return on equity ⁷⁾	9.1	12.6	17.9				
Equity-to-assets ratio ⁸⁾	26.1	35.7	37.6				
Securities market							
P/E ⁹⁾	12.6	16.0	15.8	19.0			
Yield gap ¹⁰⁾	-2.1	-0.4	2.0	1.7			
Banks							
Profit/loss ¹¹⁾	-0.1	1.3	1.2	1.3			
Interest margin ¹²⁾	5.7	3.3	2.9	2.6			
Loan losses ¹³⁾	2.1	0.2	0.1	-0.1			
Lending growth ¹⁴⁾	6.1	9.8	8.8	12.3			
Return on equity ¹⁵⁾		14.9	14.4	17.4			
Capital adequacy ¹⁶⁾	8.2	12.2	12.0	11.6			

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

2) Loan debt as a percentage of liquid disposable income

3) Household borrowing rate in per cent

4) Household borrowing rate after tax deflated by underlying inflation (CPI-ATE from 2000 Q3)

5) Households' total assets less total debt as a share of disposable income

6) Interest expenses as a percentage of cash surplus for non-financial enterprises excluding oil and gas industry and shipping

7) After-tax profit as a percentage of average equity. Average for the period 1987-1993 is calculated from 1988 Q1 due to insufficient data

8) Equity as a percentage of total capital. Average for the period 1987-1993 is calculated from 1988 Q1 due to insufficient data

9) The value of a sample of companies on the Oslo Stock Exchange divided by estimated earnings in the previous year

10) The E/P ratio for the Oslo Stock Exchange benchmark index less the 10-year government bond rate

11) Pre-tax profit as a percentage of average total assets. For the period 1987-1989, branches of foreign banks in Norway and branches of Norwegian banks abroad are included. This does not apply for other periods

12) Average lending rate less average deposit rate for all banks in Norway

13) Loan losses as a percentage of gross lending for all Norwegian banks except branches of foreign banks in Norway and branches of Norwegian banks abroad

14) Per cent. Annual growth in lending to the corporate and retail markets from all the banks in Norway. Average for the period 1987-1993 is calculated from 1988 Q1 due to insufficient data

15) Pre-tax profit as a percentage of average equity for all Norwegian banks except branches of foreign banks in Norway and branches of Norwegian banks abroad. The average for the period 1987-1993 can not be calculated due to insufficient data

16) Capital as a percentage of the basis of measurement for all Norwegian banks except branches of foreign banks in Norway and branches of Norwegian banks abroad. Projections in *Economic Bulletin 2/89* for the years 1987 and 1988 are used in the calculation of the average for the period 1987-1993

Sources: Statistics Norway, Datastream, EcoWin, The Directorate of Labour and Norges Bank

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