



NORGES BANK

Financial Stability

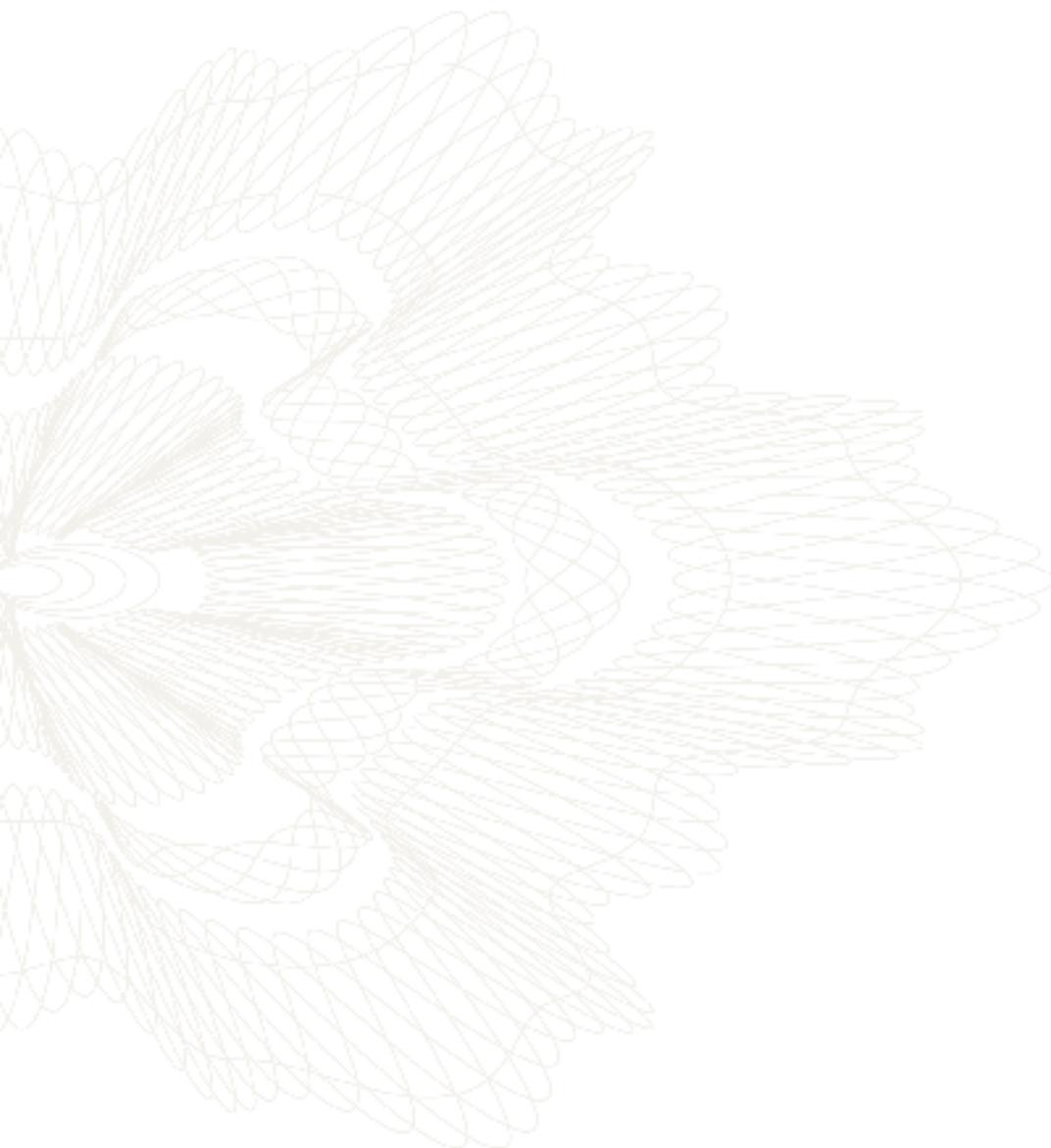
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Reports from the Central Bank of Norway No. 2/2010



# Financial Stability

## 1/10



## Norges Bank Oslo 2010

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This report is based on information in the period to 7 May 2010

## Norges Bank's reports on financial stability

Financial stability implies that the financial system is robust to disturbances in the economy and can channel capital, execute payments and redistribute risk in a satisfactory manner.

Financial stability is one of Norges Bank's primary objectives in the work on promoting economic stability. Norges Bank's tasks and responsibilities in this area are set out in Section 1 of the Norges Bank Act, which states that the Bank shall "*promote an efficient payment system domestically as well as vis-à-vis other countries*," but that the Bank may also "*implement any measures customarily or ordinarily taken by a central bank*". Section 3 states that "*the Bank shall inform the ministry when, in the opinion of the Bank, there is a need for measures to be taken by others than the Bank in the field of monetary, credit or foreign exchange policy*". Norges Bank acts as a lender of last resort. The central bank shall provide extraordinary liquidity to individual institutions in the financial sector or to the banking system when liquidity demand cannot be satisfied from alternative sources. The role of lender of last resort provides an independent justification for Norges Bank's function in monitoring the financial system as a whole and its particular focus on the risk of systemic failure.

Experience shows that the foundation for financial instability is laid during periods of strong debt growth and asset price inflation. Banks play a key role in credit provision and payment services – and they differ from other financial institutions in that they rely on customer deposits for funding. Banks are thus important to financial stability. The Financial Stability report therefore focuses on the prospects for banks' earnings and financial strength and the risk factors to which banks are exposed.

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.

# Editorial

## Renewed market turbulence

There is renewed financial market turbulence abroad owing to high government debt in many countries. Equity and bond prices are fluctuating as a result of the uncertainty surrounding developments ahead. Measures taken by the EU, ECB and IMF this past weekend seem to have calmed financial markets.

The turbulence is a reminder that the financial crisis abroad is not over, but has entered a phase where the risk of sovereign debt default is reflected in the markets.

The effects on Norwegian banks' funding costs have been moderate so far. Norges Bank is monitoring money market developments closely and will contribute to smoothly functioning markets.

Norwegian banks have posted good earnings and banks are more solid than one year earlier. More resilient banks will reduce the risk of crises in the financial system. The EU and many countries are therefore working to introduce enhanced bank liquidity management and capital regulations. The aim is to implement the new regulations by the end of 2012. The regulations will be based on the recommendations of the Basel Committee on Banking Supervision. The EU has also established a board that is to assess systemic risk and propose measures.

New regulations – with minimum standards – will be introduced in Norway via the EU and the EEA agreement.

New liquidity requirements may be introduced earlier in Norway than in the EU. Under the new regulations, banks will be required to raise more long-term funding and hold more liquid assets. This illustrates that the strong growth in the banking sector between 2003 and 2007 was not soundly financed. Stricter capital requirements are likely to have less impact on Norwegian banks because they already have strong capital buffers.

Even if the work on the new regulations has made headway, much remains to be done:

- It is uncertain how tight the new capital and liquidity management requirements will actually be. Nordic cooperation in the area of banking regulation, supervision and crisis management can contribute to sufficiently tight and uniform regulatory practice for all banks that operate in the same market.
- It is unclear how systemically important banks should be regulated and how to reduce the procyclicality of bank behaviour. The Financial Stability Board, as mandated by the G20, will present proposals for the regulation of systemically important banks next autumn.
- In Norway, household debt and house prices have risen markedly in recent years. Even if the risk of losses on residential mortgages is low in individual financial institutions, the accumulation of high household debt may lead to financial and economic instability in the longer term. Finanstilsynet (Financial Supervisory Authority of Norway) has issued new guidelines for residential mortgage lending. This may reduce the build-up of debt somewhat. More neutral property tax and capital requirements for mortgages that to a larger extent reflect overall residential mortgage risk would also make a contribution.

*Jan F. Qvigstad*  
11 May 2010

# The outlook for financial stability

Due to high government debt in many countries, global financial markets are experiencing turbulence. This increases the uncertainty surrounding bank funding in the short run. Norges Bank is monitoring money market developments and will contribute to smoothly functioning markets. Aside from this, the outlook for financial stability is broadly unchanged since the December Financial Stability report, but has improved compared with a year ago. Banks increased their capital adequacy ratios through 2009. Banks also increased their holdings of liquid assets, primarily through the government swap arrangement that provided government securities in exchange for covered bonds (OMF). Higher levels of capital and liquidity improve banks' capacity to bear losses and provide credit, strengthening their resilience to future market failures. Growth in the Norwegian economy has resumed, but the recovery is moderate. Unless the Norwegian economy is exposed to new major shocks, the banking sector is expected to show satisfactory results ahead.

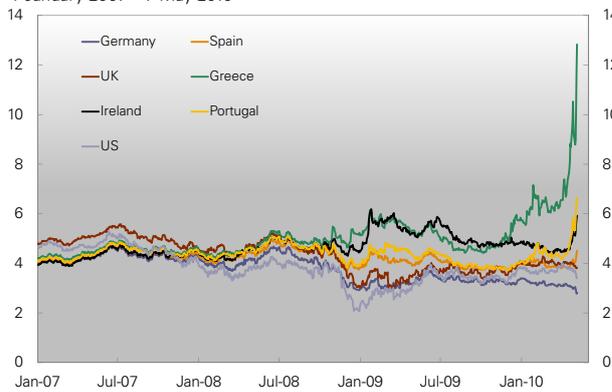
High and rapidly rising government debt in many countries is giving rise to renewed turmoil in the financial system and restricting global growth. With high house prices and substantial debt, Norwegian households are vulnerable to higher interest rates and lower income. New regulations and more active use of instruments to counteract systemic risk may curb the build-up of financial imbalances. As banks worldwide adapt to new regulations and government measures are phased out, the need for long-term funding for banks will increase. Norwegian banks may benefit from an early and gradual adjustment to the new regulatory framework.

## 1. The economic climate

### Further turbulence in global financial markets

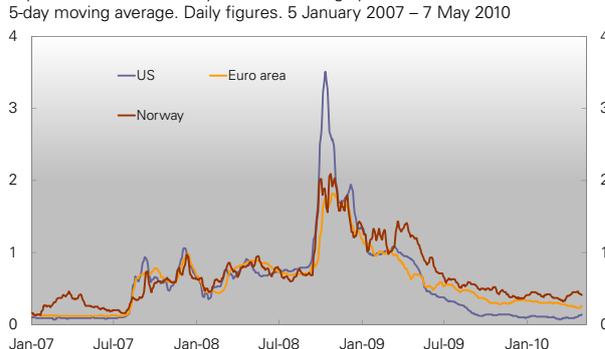
Due to high government debt in many countries, global financial markets are experiencing turbulence. Long

Chart 1 Yield on 10-year government bonds. Per cent. Daily figures. 1 January 2007 – 7 May 2010



Source: Thomson Reuters

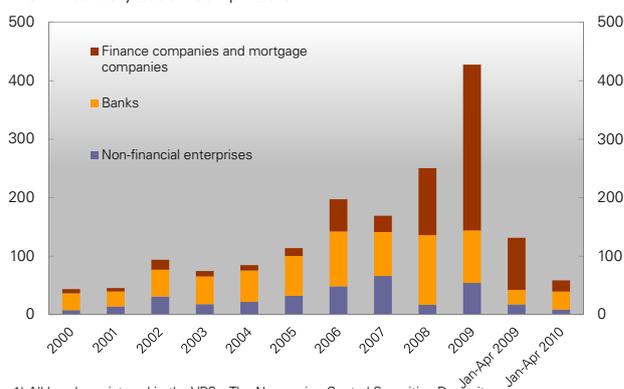
Chart 2 Spread between 3-month money market rate and market expectations about the key rate<sup>1)</sup>. Percentage points. 5-day moving average. Daily figures. 5 January 2007 – 7 May 2010



<sup>1)</sup> Expected key rates are derived from Overnight Indexed Swaps (OIS). OIS for Norway estimated by Norges Bank.

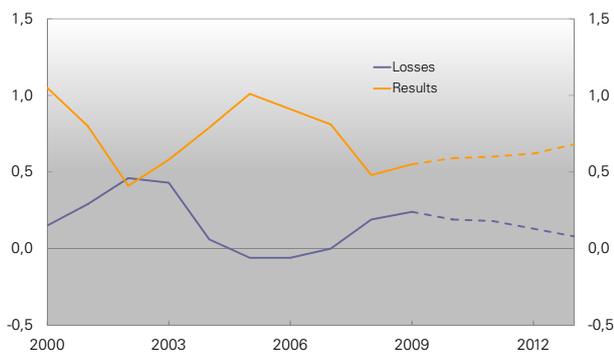
Sources: Bloomberg, Thomson Reuters and Norges Bank

Chart 3 Bonds issued<sup>1)</sup> in Norway. All VPS-registered issues. In billions of NOK. 1 January 2000 – 30 April 2010



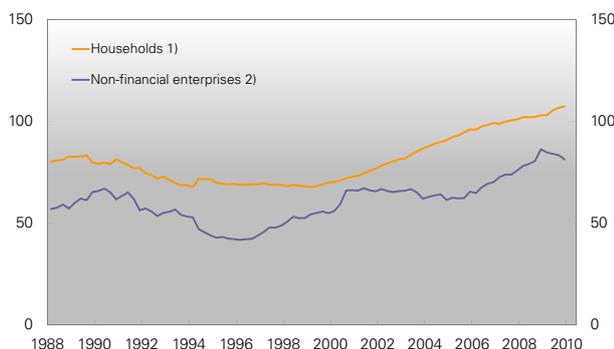
<sup>1)</sup> All bonds registered in the VPS – The Norwegian Central Securities Depository. Source: Stamdata

Chart 4 Banks' loan losses and post-tax results as a percentage of average total assets. Annual figures. 2000 – 2013<sup>1)</sup>



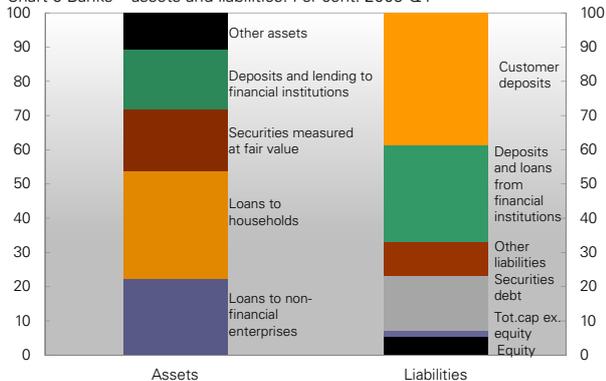
1) All banks in Norway. Projections for 2010 – 2013 for DnB NOR, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge. Source: Norges Bank

Chart 5 Debt held by households and enterprises mainland Norway as a percentage of GDP mainland Norway. Quarterly figures. 1988 Q1 – 2009 Q4



1) Domestic credit (C2 households).  
2) Assuming all foreign lending to mainland Norway is to non-financial enterprises. Sources: Statistics Norway and Norges Bank

Chart 6 Banks<sup>1)</sup> assets and liabilities. Per cent. 2009 Q4



1) All banks in Norway. Norwegian banks' foreign subsidiaries and branches abroad are not included. Sources: Statistics Norway and Norges Bank

government bond yields have increased markedly in these countries (see Chart 1). There is renewed volatility in equity and bond markets in Norway and abroad as a result of the uncertainty concerning developments ahead.

A number of global financial markets are functioning better than a year ago (see Section A). Risk premiums in money markets have almost reverted to the levels seen before summer 2007 (see Chart 2). Risk premiums in bond markets have also fallen since the December report, but are still well above pre-crisis levels before 2008. In the first four months of 2010, Norwegian enterprises, banks and mortgage companies relied on bond markets for funding to a lesser extent than during the same period in 2009 (see Chart 3).

Equity markets in the US and Europe have advanced by 60 – 70% since the trough at the beginning of March 2009. Oslo Børs peaked around April this year, but has fallen back in the past two weeks, partly as a result of market turbulence. Banks worldwide have increased their equity capital. However, an unusually large share of bank funding will mature over the next three years, making banks vulnerable to renewed turbulence in the financial system.

The global economy is rebounding, but capacity utilisation is still low in many countries. In Norway's neighbouring countries, recent developments have been fairly weak. In Norway low interest rates combined with increased public spending and high oil investment have limited the decline in activity and bank losses. Growth in the Norwegian economy was projected to pick up gradually, but there is increased uncertainty about the outlook owing to renewed market turbulence, especially in Europe.<sup>1</sup>

### Norwegian banks still face challenges

Banks' results in 2009 were more favourable than expected last spring (see Section B), partly as a result of high income from securities, foreign exchange and derivatives trading. However, underlying earnings are under some pressure. Competition for loan customers is depressing interest margins. Bank earnings will probably be

1 The projections for economic developments in this report are based on the analyses in *Monetary Policy Report 1/10*, published in March.

somewhat weaker ahead compared with the years preceding the financial crisis as loan losses and funding costs rise while lending growth declines. In the years ahead, bank earnings are expected to stabilise around the 2009-level (see Chart 4), but the uncertainty about banks' results ahead have increased because of renewed turmoil in the financial markets.

Banks' loan losses have been lower during the crisis than in the period 2002–2004. Losses will probably stabilise in 2010 (see Chart 4).

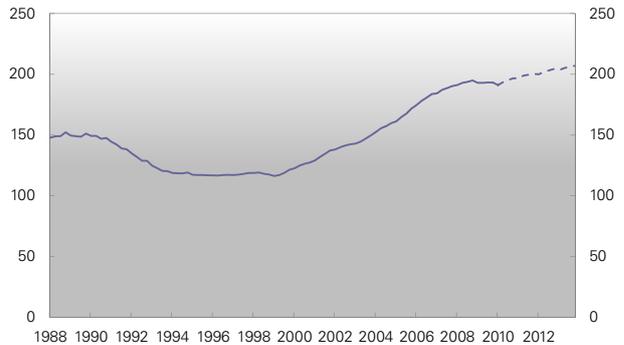
High levels of debt make borrowers vulnerable to a rise in interest rates and loss of income. Total debt among Norwegian enterprises and households has grown substantially over the past ten years relative to mainland GDP growth (see Chart 5). A substantial share of the debt comprises loans from Norwegian banks. At end-2009, lending to Norwegian enterprises comprised 22% while the share per households was 32% of banks' total assets (see Chart 6).

The prospects for Norwegian households' debt-servicing capacity are approximately unchanged since the December report. Households saved a large share of disposable income in 2009. The saving ratio will probably fall again if uncertainty with regard to the economic outlook recedes. Unemployment is expected to edge up through 2010, decreasing slightly thereafter. At the same time, the household debt burden (debt as a percentage of disposable income) is historically high and is expected to rise somewhat ahead (see Chart 7). Substantial debt and higher mortgage rates will lead to higher interest expenses ahead.

Relative to other countries, Norwegian house price growth has been high over the past ten years (see Chart 8). House prices have continued to rise since the December report. Higher house prices lead to higher collateral values and, in isolation, lower bank losses in the event of default. Yet if house prices are above their long-term equilibrium level, collateral values will be vulnerable.

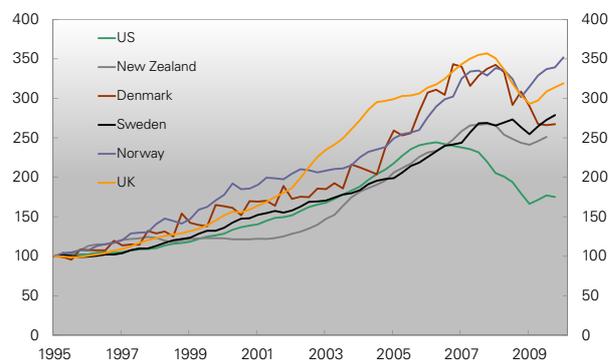
The prospects for Norwegian enterprises' debt-servicing capacity have improved somewhat since the December report. The number of bankruptcies has fallen and profits

Chart 7 Household debt burden<sup>1)</sup>. Per cent. Quarterly figures. 1988 Q1– 2013 Q4<sup>2)</sup>



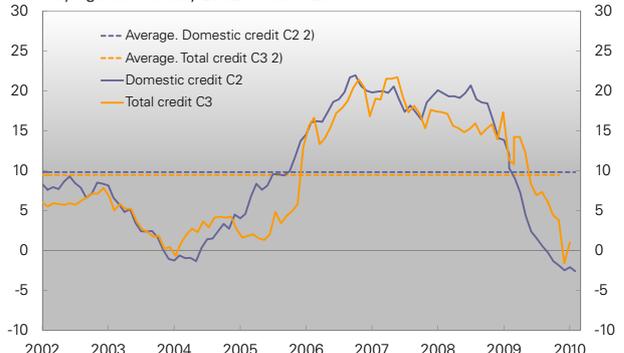
1) Loan debt as a percentage of disposable income adjusted for reinvested dividend income.  
2) Projections for 2010 Q1 – 2013 Q4.  
Sources: Statistics Norway and Norges Bank

Chart 8 House prices in a selection of countries. Indices. 1995 Q1 = 100. Quarterly figures. 1995 Q1 – 2010 Q1



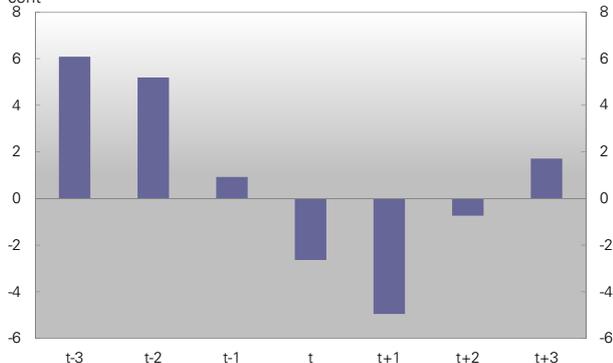
Sources: Thomson Reuters, Association of Norwegian Real Estate Agents, ECON Pöyry, Finn.no, Association of Real Estate Agency Firms and Norges Bank

Chart 9 12-month growth in total credit to mainland enterprises. Per cent. Monthly figures. January 2002 – March 2010<sup>1)</sup>



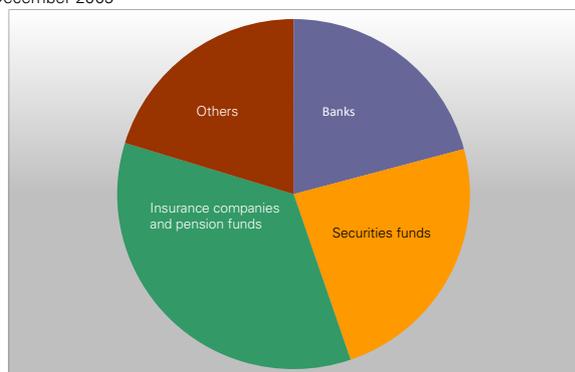
1) Last observation for C3 is January 2010.  
2) Average for the period 2002 Q1 – 2009 Q4.  
Source: Statistics Norway

Chart 10 Real GDP growth prior to, during and after banking crises<sup>1)</sup>. Per cent



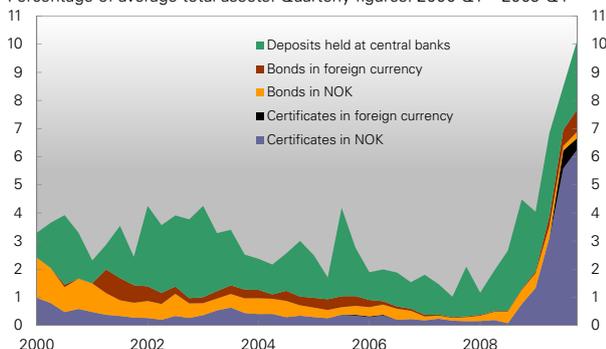
1) Average annual growth for Finland (t=1991), Sweden (t=1991), Japan (t=1992) and Norway (t=1987), where t is the year the crisis started.  
Source: IMF

Chart 11 Investors in certificates and bonds issued by banks and insurance companies in NOK. Share of total amount outstanding. At 31 December 2009



Source: VPS

Chart 12 Norwegian banks<sup>1)</sup> holdings of government and government-guaranteed bonds and certificates and deposits in central banks. Percentage of average total assets. Quarterly figures. 2000 Q1 – 2009 Q4



1) All banks excluding branches of foreign banks in Norway.  
Source: Norges Bank

are at a moderate level. Corporate profitability is expected to stabilise at the current level, but there is increased uncertainty about the outlook for the Norwegian economy. Equity ratios in the corporate sector are at the outset fairly high.

Enterprises have reduced their debt since the December report (see Chart 9). Lower debt, retained earnings and capital injections have combined to improve enterprises' financial strength somewhat. Further debt reduction is expected in the next six months. With lower investment levels and a need for restructuring, corporate credit demand has decreased. It has also become somewhat easier for enterprises to obtain loans from banks.

The European Commission has put forward proposals for tighter regulation of bank capital and liquidity management. The new directive will require banks to hold more liquid assets and to base funding to a greater extent on equity capital and other long-term funding (see Section C). This will be of benefit to society as a whole. New regulation can be expected to increase the resilience of the banking sector and mitigate the risk of new financial crises.

Financial crises are costly. Managing acute crises involves considerable expense. In addition, heavy costs are inflicted on society in the form of low output and increased unemployment (see Chart 10).

Banks' need for long-term funding will increase going forward. Banks will face considerable refinancing needs as the authorities in Norway and other countries gradually phase out the extraordinary liquidity measures. Norwegian banks will have to refinance NOK 230bn in debt as the government swap arrangement is gradually wound down in the period to 2014. In addition, new regulation will require a substantial change in bank behaviour. Banks in Norway and other countries are expected to issue large volumes of long-term debt in order to satisfy the new liquidity requirements. This illustrates the excessive risk that has been taken by banks.

Capital inflows from countries with high saving ratios are boosting liquidity in financial markets. Nonetheless, demand for debt instruments issued by banks in the Norwegian market may fall ahead. Banks largely obtain

funding by issuing certificates and bonds that are purchased by other banks and insurance undertakings (see Chart 11). Changes in the solvency rules for insurance undertakings (Solvency II) may contribute to lower demand for bank certificates of deposit (CDs) and bank bonds among these undertakings (see box on page 32). Demand for long-term paper will, however, increase. This may make it easier for bank-owned mortgage companies to issue long-term covered bonds.

New collateral requirements for loans from Norges Bank will reduce the risk of financial contagion in the banking sector. As a result of these new collateral requirements, and the new quantitative liquidity requirements, banks will no longer be as interested in holding bonds and certificates issued by other banks on their balance sheets (see Section C). Banks' access to funding from other banks may therefore also be impaired. According to new statutes for money market funds that are members of the Norwegian Mutual Fund Association, these funds can no longer invest in long-term paper. In isolation, this may reduce demand for Norwegian bank bonds. The new statutes may at the same time contribute to increased fund purchases of bank CDs.

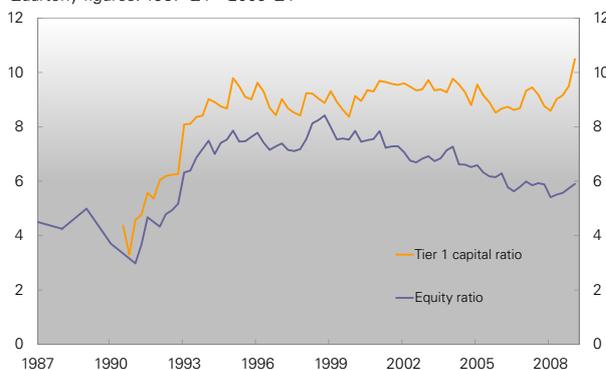
A higher proportion of long-term funding, normally more expensive than short-term funding, and low returns on liquid assets may put pressure on banks' profitability ahead. However, the level of risk will be lower when banks have adapted to the new requirements. This may reduce the premiums banks pay to obtain financing.

### Banks more robust to losses and market failure

Norwegian banks' holdings of highly liquid assets have increased considerably since 2008 Q2 (see Chart 12). As a result, banks are better equipped to cope with failing markets. The increase is primarily due to government securities provided through the government swap arrangement. These securities must be gradually re-exchanged as the arrangement is phased out in the period to 2014.

Through 2009, Norwegian banks have strengthened their capital base by retaining profits, issuing Tier 1 capital to the Norwegian State Finance Fund and issuing equity in the market (see Chart 13). As a result, banks are in a better

Chart 13 Banks<sup>1)</sup> Tier 1 capital adequacy ratio and equity ratio. Per cent. Quarterly figures. 1987 Q4 – 2009 Q4



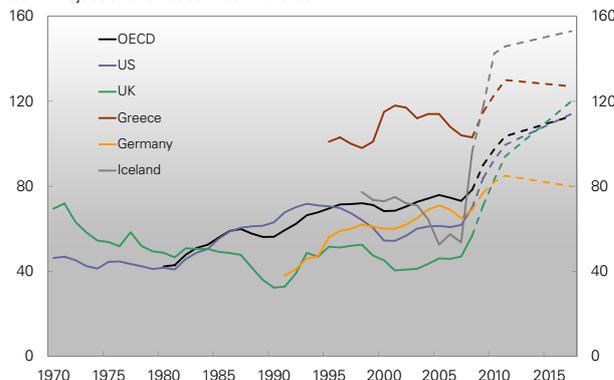
1) All banks excluding branches of foreign banks in Norway. Equity ratio prior to 1990 is for all banks. Sources: Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

Chart 14 Budget deficits, public debt and current account balances in selected European countries with high public debt. Percentage of country specific GDP. 2009

	Gross public debt as a percentage of GDP	Public budget balance as a percentage of GDP	Current account balance as a percentage of GDP
Greece	115.1	-13.6	-13.1
Portugal	76.8	-9.4	-10.5
Spain	53.2	-11.2	-5.1
Italy	115.8	-5.2	-3.2
Ireland	64.0	-14.3	-2.9
UK	68.1	-11.5	-1.3

Source: EU Commission (European Economic Forecast 2010)

Chart 15 Gross public debt as a percentage of GDP. Annual figures. 1970 – 2017. Projections for 2009 – 2011 and 2017



Source: OECD Economic Outlook 86

position to absorb losses and provide credit. Increased solidity boosts confidence in Norwegian banks and, in isolation, reduces premiums in market funding. If developments are in line with expectations in the period to 2013, banks will hold sufficient Tier 1 capital to engage in normal lending activities (see Section E).

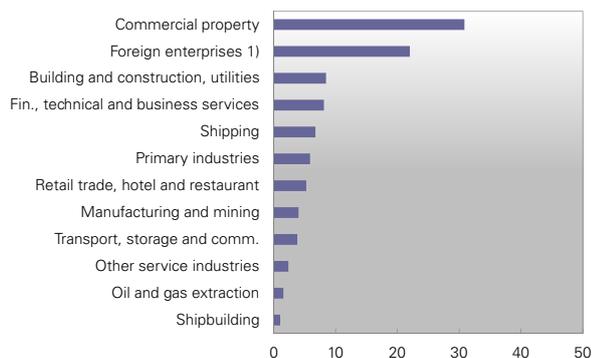
## 2. Risk outlook

The outlook for financial stability in the short and medium term is broadly unchanged since December 2009, but has improved compared with a year ago. Uncertainty is nonetheless high, partly because of renewed turmoil in financial markets. An important objective of our analyses is to identify factors that may weaken the outlook and threaten the stability of the financial system.

### 2.1 Liquidity risk

Norwegian banks were adversely affected during the financial crisis due to the excessive use of short-term market funding to finance long-term lending. Stress testing of bank liquidity indicates that banks are still vulnerable in the short run if markets fail, despite being somewhat more robust than a year ago. In a number of banks, holdings of liquid assets are too limited and reliance on short-term funding too high to fulfil the requirements of an alternative stress scenario in line with international recommendations (see Section C).

Chart 16 Bank and mortgage company lending by industry. Percentage of total corporate lending. 2009 Q4



1) Around 2/3 of banks' overall lending to foreign enterprises is to shipping.  
Source: Norges Bank

The crisis has given rise to new imbalances. Budget deficits are substantial in many countries and government debt is rising rapidly (see Chart 14). Higher government bond yields have pushed up borrowing costs for some governments. Deficits have increased markedly because of reduced tax revenues and stimulus measures to underpin activity, but also due to government support measures for banks. Debt growth may become self-reinforcing unless tax revenues increase or spending is reduced quickly enough. As a result, the phasing-out of crisis measures may be moved forward. At the same time, the authorities' ability to manage any new collapse in the financial system will be impaired. Government debt in OECD countries is expected to rise for several years ahead (see Chart 15). There is now considerable unrest surrounding government finances in several southern European countries. Whether this unrest will have contagion effects on other financial markets is uncertain.

With the new liquidity requirements, banks will be more robust. In the event of considerable turbulence in financial markets ahead, banks may find it demanding to satisfy the new requirements. With appropriate transitional rules, adapting to the new requirements will be less demanding.

### 2.2 Credit risk

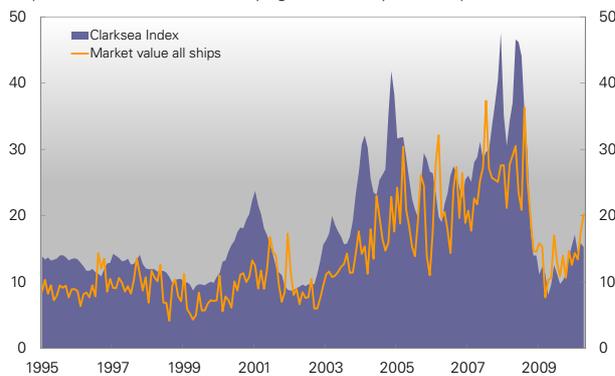
Banks' corporate credit risk seems to be moderate in the short term, having decreased somewhat since the December report. Weaker economic developments may, however, alter the picture. Even though global growth is picking up, the recovery is fragile. Substantial debt in both the private and public sectors will limit growth in many countries ahead. In a number of countries, corporate and household debt is at the highest level ever recorded. High levels of debt restrict future consumption and investment. Weak government finances in many countries will at the same time lead to fiscal policy tightening. With interest rates at historically low levels, the scope for further monetary policy easing is also limited. In addition, bank credit standards in the US and Europe are still tight. This may hold back global economic growth, which will also impact on the Norwegian economy. Norwegian borrowers' debt-servicing capacity may be weaker than currently anticipated.

There is a risk that in the event of a longer and deeper downturn, banks' loan losses will be higher than currently envisaged (see Section E). Higher loan losses may induce many banks to attempt to maintain capital adequacy by restricting lending, in particular lending to industries sensitive to international business cycles. The largest Norwegian banks have large shipping loan portfolios, while many banks lend extensively to the commercial property sector (see Chart 16).

Developments in the shipping sector since the December report have been somewhat more favourable than expected. Nonetheless, the shipping industry is highly dependent on the level of activity in the global economy ahead. The decline in world trade and extensive shipbuilding activity have resulted in surplus capacity in several segments of the industry. In the first half of 2009, surplus capacity led to a marked fall in freight rates (see Chart 17), leading to a decline in profitability and debt-servicing capacity for many shipping companies. Surplus capacity is a long-term, structural problem, particularly for container ships. However, cancellations have reduced order books for new ships. Market prices for ships have fallen in 2009 in many industry segments. This has reduced collateral values in banks, making shipping companies dependent on equity issues in order to comply with loan conditions on bank debt. The longer the low level of activity in the global economy and low freight rates persist, the more shipping companies will experience falling profitability and lower collateral values. This may lead to high bank losses.

Credit risk on loans to the commercial property sector has eased somewhat since the December report. After a period of very weak results, profitability among listed companies has stabilised at a moderate level. Sharp falls in prices through 2007 and 2008 reduced bank collateral values and property companies had to increase their equity capital in order to comply with loan conditions on bank debt. The fall in rents and prices has come to a halt (see Chart 18). However, if activity in service industries declines and firms reduce their workforces, commercial property prices may fall again. Banks' have lent extensively to property companies, and an appreciable fall in property prices and a

Chart 17 Freight rates (Clarksea Index)<sup>1)</sup> in USD per day and market value of ships in millions of USD. Monthly figures. January 1995 – April 2010



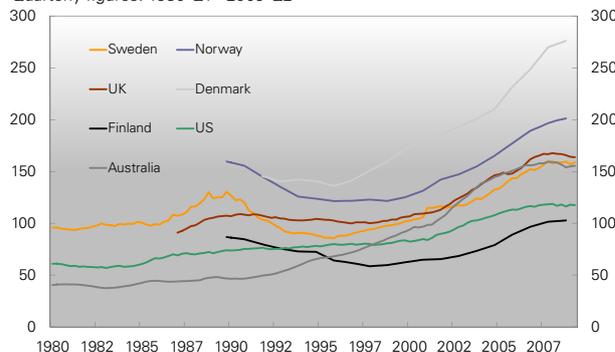
1) Weighted average for earnings in the tanker, bulk, container and gas segments. Source: Clarkson Research Services Ltd

Chart 18 Rental prices and market value of office premises<sup>1)</sup>. Indices. 1986 = 100. Semi-annual figures. June 1986 – December 2009



1) High-standard offices centrally located in Oslo. Sources: OPAK, Statistics Norway and Norges Bank

Chart 19 Household debt as a percentage of disposable income<sup>1)</sup>. Per cent. Quarterly figures. 1980 Q1 – 2009 Q2



1) Figures are not necessarily comparable due to differences in definitions and institutional arrangements. Sources: BIS, central banks, Thomson Reuters and Sveriges Riksbank

further deterioration in profitability will therefore result in considerable loan losses for banks.

In the other Nordic countries and in the Baltic countries, the decline in economic activity has been considerably steeper than in Norway. DnB NOR is therefore still exposed to loan losses in the Baltic countries. Norwegian financial institutions' direct exposures to countries with high government debt levels (Portugal, Italy, Ireland, Greece and Spain) are small in total. No institution has significant exposures to Greece.

In the short term, banks' household credit risk is low and approximately unchanged since the December report (see Section D). The high level of household debt in Norway may nonetheless pose a challenge to financial stability in the longer term (see Section 2.3).

The supply of capital to banks since summer 2009 has reduced the risk of solvency problems as a result of loan losses in the banking sector in the years ahead. Stress testing of bank solvency shows that banks will be able to comply with current capital adequacy requirements even in the event of low global growth, a fall in oil prices and some increase in losses on shipping and commercial property loans (see Section E). There is thus no clear evidence in these analyses that banks need more capital. New inter-

national capital adequacy requirements may nevertheless compel some banks to raise more capital.

### 2.3 Systemic risk

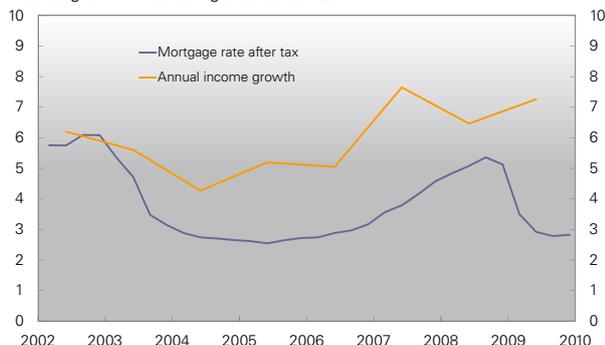
Household debt in Norway is high both historically and in comparison with other countries (see Chart 19). Even though bank losses on residential mortgages are low, the accumulation of household debt may give rise to financial and economic instability in the longer term. High household debt may lead to abrupt changes in household demand, which may disturb economic activity and in turn lead to increased loan losses for banks. At the same time, a downturn in the business sector will feed back to household finances, with higher unemployment and lower income. High house prices and high levels of debt therefore pose a challenge to economic policy.

The high household debt burden is closely linked to high and rising house prices. Housing investment has been profitable in Norway for some time, due to favourable tax treatment of housing investment and housing consumption compared with investment in other real capital and in financial instruments. Partly due to the favourable tax treatment, post-tax mortgage rates have been lower than income growth in Norway over the past ten years (see Chart 20). This has resulted in overinvestment in housing capital and has fuelled house price inflation. This stimulates household debt accumulation, contributing to the build-up of financial imbalances over time.

It has been easy for households to finance house purchases in recent years. With very low capital requirements for residential mortgages as a result of changes in capital regulation, banks have enjoyed high returns on the equity capital required to extend residential mortgage loans. As a result, there is strong competition among banks offering residential mortgage loans. Finanstilsynet's new guidelines for mortgage lending in conjunction with new capital regulation may have a dampening effect on banks' lending growth (see boxes on pages 20 and 38).

Banks are not required to post capital to cover losses they inflict on the wider economy by excessive residential mortgage lending. Banks' capital weights on residential

Chart 20 Mortgage rate<sup>1)</sup> after tax. Quarterly figures. 2002 Q1 – 2009 Q4. Income growth<sup>2)</sup>. Annual figures. 2002 – 2009



1) Interest rate on repayment loans secured on dwellings.  
2) Disposable income adjusted for reinvested dividend.  
Sources: Statistics Norway and Norges Bank

mortgage loans are very low because individual banks' losses on these loans have been very low. The largest banks, which use their own risk models to calculate capital requirements, operate with risk weights of 10–15% on their residential mortgage loans. With a risk weight of 10% for residential mortgage loans and a minimum Tier 1 capital requirement of 4% of risk-weighted assets, banks can provide NOK 250 in residential mortgage lending for every krone of Tier 1 capital.

Capital requirements for comparable loans across banks are very different, despite fairly similar risk. Capital requirements for residential mortgages for banks using the standardised approach are 35% – about three times higher than for the largest banks that use their own risk models.<sup>2</sup> Capital requirements for residential mortgage loans also vary across banks using their own risk models.

If global growth decelerates again and activity remains low for a longer period, the scope for interest rate reductions in Norway will be limited. Debt and house prices may then rise to even higher levels, even if growth in the Norwegian economy proves to be lower than projected in the baseline scenario (see Section E). In such a situation, there will be an even clearer need for instruments that can prevent systemic risk.

### 3. Follow-up by the authorities

In the December report, it was noted that banks' liquidity management had not been robust and that there was a need for more stringent liquidity requirements. Larger financial buffers have made banks somewhat more robust than they were a year ago, but the banking system is still vulnerable to financial market failure in the short run. Internationally, there is still market turmoil owing to high government debt levels in many countries. Norges Bank is monitoring money market developments closely and will contribute to smoothly functioning markets.

Norwegian banks should secure long-term funding while the supply is ample and take advantage of openings in the market when investors show interest in investing in long-term bank paper. On 1 February, Finanstilsynet, in consultation with Norges Bank, submitted a letter to the Ministry of Finance. As noted in the letter, there may be reasons for moving forward the introduction of quantitative liquidity requirements in Norwegian regulations. Transitional arrangements can ensure a gradual, though early adjustment to the new liquidity requirements.

The capital requirement for residential mortgage lending should to a greater extent reflect the total risk of such loans. This may be achieved by adjusting risk weights for banks using internal risk models, so that they are more comparable to those of the banks using the standardised approach, see Norges Bank and Finanstilsynet's joint response to the European Commission on 16 April<sup>3</sup>. Higher risk weights on residential mortgage loans may curb banks' eagerness to extend residential mortgage loans (see box on page 38). We also supported proposals for a buffer requirement in excess of the minimum capital adequacy requirement and equity capital ratio requirements in banks. Such requirements would reduce the risk to economic and financial stability.

More neutral taxation of housing investment and housing consumption would curb the rise in prices and housing debt.

National supervisory authorities may be reluctant to impose stringent requirements on their banks, fearing that this will give them a competitive disadvantage. It is important to avoid such regulatory slips towards a – too low – common minimum level. In practice, the Nordic countries make up a common banking market. As mentioned earlier, extended cooperation on bank regulation, supervision and crisis management between political authorities, supervisory authorities and central banks in the Nordic region may contribute to sufficiently tight and uniform regulatory practice for all banks operating in the same market.

<sup>2</sup> Banks utilising the standardised approach must apply a risk weight of 75% for residential mortgages with a loan-to-value (LTV) ratio above 80%. With an LTV below 80%, the risk weight is 35%.

<sup>3</sup> See [www.norges-bank.no/templates/article\\_\\_\\_76700.aspx](http://www.norges-bank.no/templates/article___76700.aspx)

## Recommendations in 2009

Autumn 2008 saw an increase in banks' loan losses. At the same time, there was a substantial increase in market requirements regarding bank capital. In spring 2009, there was considerable uncertainty regarding future bank losses and earnings. In Financial Stability 1/09, we drew attention to banks' need for more capital. Since spring 2009, banks have increased their Tier 1 capital ratio by over one percentage point (see Chart 13).

In both reports in 2009, we recommended implementation of increased requirements for equity capital of high quality in banks. We also pointed out that capital regulations should be amended so as to enable banks to build up sound buffers in good times in excess of the minimum requirement for capital adequacy. In the December report we also recommended implementation of minimum requirements for banks' holdings of liquid assets and stable funding.

On 17 December 2009, the Bank for International Settlements (BIS) published recommendations concerning requirements relating to liquidity, capital and supervision. On the same day, the Ministry of Finance submitted a letter to Finanstilsynet referring to these recommendations. The letter also referred to the letter from

Norges Bank and Financial Stability 2/09 and requested Finanstilsynet to consider more closely whether the Norwegian liquidity regulations should provisionally be tightened pending the final drafting of new rules from the BIS and the EU. The letter also requested Finanstilsynet to consider whether, pending the recommendations from the BIS and the EU, it would be appropriate to tighten the formal Tier 1 capital requirement. On 1 February 2010, Finanstilsynet submitted a response, drawn up in consultation with Norges Bank, to the Ministry of Finance. In the letter, Finanstilsynet pointed out that while there may be reasons for implementing new liquidity requirements somewhat earlier than provided for in the international schedule, there is no immediate need for earlier implementation of new and more stringent capital requirements.

Since Financial Stability 2/09, the European Commission has proposed more stringent requirements for bank capital and liquidity (see Section C). In a consultative submission of 16 April 2010, Norges Bank and Finanstilsynet gave general support to these proposals.

On 3 March 2010, Finanstilsynet issued guidelines for prudent residential mortgage lending. These

guidelines will limit the loan-to-value ratio for residential mortgages. In previous reports, we have given our support to such measures.

In November 2009, the International Accounting Standards Board (IASB) issued a proposal for new accounting rules requiring banks to book anticipated losses over a loan's maturity, and not only when it is clear that losses will occur. In previous reports we have given our support to such measures.

In both reports in 2009, we recommended a more neutral taxation of housing investment and housing consumption. We also pointed out that cooperation on the regulation should be anchored in the finance ministries of the Nordic countries. In Financial Stability 2/09, we recommended that capital requirements for mortgages should reflect to a larger extent the systemic risk resulting from excessive growth in mortgage lending. In this report, we also recommended that the system for membership fees of the Norwegian Banks' Guarantee Fund should be designed so that banks supply more capital to the Fund, without setting a low ceiling on the size of the Fund.

## Macroprudential supervision and systemic risk

The financial crisis has served as a reminder that a robust financial system is a prerequisite for economic stability. The role of the financial system is to channel funds from savers to borrowers, perform payment services and spread risk.

In Norway, the work on financial stability is divided between the Ministry of Finance, Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank. The Ministry of Finance has the overriding responsibility, particularly for the framework conditions. Finanstilsynet is the supervisory authority for individual institutions and assesses their resilience and risk management. Norges Bank is responsible for promoting an efficient payment system domestically and vis-à-vis other countries, and monitors developments in money, credit and foreign exchange markets (see §1 of the Norges Bank Act). The Bank shall also inform the ministry when the Bank is of the opinion that there is a need for others than the Bank to take measures in the field of monetary, credit or foreign exchange policy (see §3 of the Norges Bank Act). Norges Bank monitors the financial system as a whole and focuses in particular on mitigating the risk of systemic failure.

Macroprudential supervision seeks to mitigate the risk that the financial system will no longer be able to perform its functions in a satisfactory

manner. Systemic risk may be rooted in financial imbalances that develop over time or through contagion channels between financial institutions, i.e. involving both a time dimension and horizontal dimension. Moreover, problems in big institutions may have extensive, direct effects on the functioning of the financial system.

Financial problems that spread between financial institutions may be the result of cross exposures between institutions, dependence on funding in the same markets or exposure to the same risk in other ways. Even if each bank is solid, the banking sector may nevertheless be vulnerable as a system. For example, each bank may seem to be well diversified, while the banking system as a whole is little diversified because the banks are exposed to the same type of risks.

Systemic risk that builds up over time is attributable to feedback effects between the financial system and the real economy. The financial system can amplify fluctuations in the economy. In good times, asset prices rise and credit risk is perceived as low if banks do not see through short-term economic fluctuations in their assessments. Credit growth may then be higher, amplifying an upturn. Systemic risk increases with debt levels – both within and outside the financial system. In adverse periods, risk

appetite may subside and perceived risk increase, and many borrowers will seek to reduce debt burdens at the same time. Debt burdens can be reduced by selling assets. This amplifies the decline in asset prices and further weakens activity in the real economy.

High household debt-income ratios can constitute such a systemic risk, particularly when the asset is highly leveraged. Experience shows that even if the risk of losses on such loans in individual financial institutions is low, high household debt-income ratios can lead to financial and economic instability in the longer run.

### Instruments for mitigating systemic risk

The financial crisis revealed the need for reform of financial market regulation with a view to ensuring stability and resilience in the financial system as a whole. The Financial Stability Board (FSB) established by the G20 countries, the Basel Committee on Banking Supervision, the IMF and the EU are now discussing instruments that contribute to mitigating systemic risk.

The proposals are primarily based on the use of the same type of instruments applied by Finanstilsynet in its supervision of institutions. The guidelines for prudent residential mortgage lending published by Finanstilsynet in March are one

example of an instrument that can reduce systemic risk. Other examples are capital buffers that are to be built up in favourable periods and can be drawn on in adverse periods, and additional capital buffer requirements for systemically important financial institutions. An additional capital requirement can, for example, be set based on the institution's size, complexity or how interwoven its activity with other institutions is. More capital will reduce the risk of crisis. At the same time, it will provide incentives to avoid becoming a systemically important institution.

The consequences for society of a collapse of a big and complex financial institution can be substantial. As a result, there is a risk that such institutions expect to be bailed out by governments, which may induce them to take excessive risk. The incentive to take excessive risk can be reduced if the authorities prevent financial institutions from becoming too big and too important to the financial system.

A credible crisis management framework for financial institutions, big and small, without unnecessary disturbances to the financial system, is also important. The authorities are assessing regulations and mandates to enhance their role in crisis management.

The authorities can also reduce systemic risk by imposing requirements relating to the marketplace and the settlement system for financial serv-

ices. Incentives have been proposed to settle derivatives transactions through a central counterparty. The central counterparty guarantees settlement and thereby promotes safer and more transparent derivatives markets.

### Division of roles and responsibilities

Norges Bank has a responsibility for financial stability in Norway, and focuses in particular on systemic risk in the financial sector. When financial stability was threatened in Norway in autumn 2008, Norges Bank contributed to mitigating systemic risk by providing banks with extraordinary liquidity with longer maturities than normal. In addition, Norges Bank assisted in establishing a swap line involving covered bonds and recommended in 2008 that the Ministry of Finance should prepare measures for providing banks with government capital. The work to mitigate systemic risk also includes consultative papers on proposed changes to international regulations, analyses and assessments in our reports on financial stability and advice on the use of instruments available to institutions other than Norges Bank, for example the tax system or capital adequacy regulations.

Many countries are now discussing the need for a clearer division of roles and responsibilities between government bodies with regard to the work on financial stability. Riksbanken in Sweden has asked the

Riksdag (Swedish parliament) for an analysis of the responsibility, role division and instruments in the work on financial stability in Sweden.<sup>1</sup>

The financial crisis has also demonstrated that there is a need for international cooperation in the field of financial stability. The turbulence in financial markets rapidly spread across borders. The EU is in the process of setting up the European Systemic Risk Board (ESBR). The ESBR shall identify risks to the European financial system as a whole and recommend measures to mitigate systemic risk. For Norway, it is important that regulation and supervision are practiced in a tight and uniform manner in the Nordic countries. Norges Bank has noted in several reports on financial stability that there is a need for a greater degree of coordination and cooperation between Nordic authorities in the areas of regulation and supervision (see, among others, *Financial Stability* 1/09 and 2/09).

<sup>1</sup> "Submission to the Riksdag. Submission on certain areas that require investigation as a result of the financial crisis"; Sveriges Riksbank, 12 February 2010, and "Urgent need for new financial regulations and tools"; Economic Commentaries no. 1, 2010, Sveriges Riksbank

## Finanstilsynet's new guidelines for prudent lending – effects on household debt

On 3 March 2010, Finanstilsynet (Financial Supervisory Authority of Norway) issued guidelines for prudent residential mortgage lending. The guidelines may curb household debt growth.<sup>1</sup> Reduced access to residential mortgages may restrain house prices.

The regulation imposes requirements for the loan-to-value ratio and debt-servicing capacity for new residential mortgages. The requirement regarding loan-to-value ratio is that the loan shall not normally exceed 90% of the value of the dwelling. Simple calculations show that household debt growth would have fallen from 11.8% to between 5.9% and 7.8% in 2007 if banks had applied such a practice (see Chart 1).

Banks are also required to have

guidelines for calculating customers' surplus liquidity, i.e. debt-servicing capacity based on income, total costs, consequences of increases in interest rates and instalments. Calculations show that household debt growth would have been between 6.6% and 7.9% in 2007 if banks had assumed an interest rate of 6%, normal living expenses<sup>2</sup> and 25-year self-amortising loans in its guidelines. If banks had instead assumed an interest rate of 9% when calculating customers' debt-servicing capacity, household debt growth would have been between 5.3% and 6.7% in 2007.

For banks that do not calculate surplus liquidity, it is required that the loan shall not normally exceed three times total gross income. Simple calculations show that household

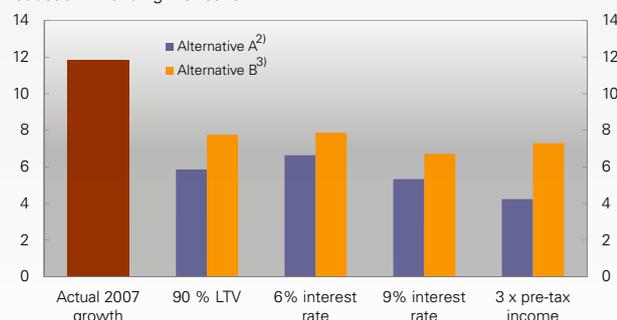
debt growth would have been between 4.2% and 7.3% in 2007 under such a requirement.

The effects of the new guidelines on household debt is probably somewhat smaller than shown in our calculations. The calculations do not take into account that many households receive transfers and guarantees from parents and other sources. Moreover, household wealth is not included.

1 A closer review of these effects is provided in "Hvordan påvirker reguleringer av boliglån gjeldsveksten i husholdningene" [How to influence regulation of household mortgage debt growth], Bjørn Helge Vatne *Penger og Kreditt* 1/2010

2 Normal living expenses are calculated on the basis of the Standard Budget prepared by the National Institute for Consumer Research (SIFO)

Chart 1 Estimated credit growth in 2007<sup>1)</sup> by requirement and by share of reduction in lending. Per cent



1) According to micro data, total household credit growth was 12 per cent in 2007.

2) Alternative A assumes that non-complying loans would not have been approved.

3) Alternative B assumes that non-complying loans would have been approved, but reduced to comply with the requirement.

Sources: Statistics Norway and Norges Bank

# Sections

A. Global challenges

B. Improved earnings for Norwegian banks

C. New framework conditions for banks

D. Moderate improvement in the outlook for Norwegian borrowers

E. Stress testing banks' capital adequacy

## A. Global challenges

*High and rising government debt in many countries has led to renewed turbulence in the financial system. Many financial market segments are still functioning better than one year earlier. Banks will nonetheless have to absorb substantial losses ahead and credit standards are tight.*

### Renewed turbulence in financial markets

In recent weeks, turbulence has returned to financial markets owing to high government debt in many countries. Government bond premiums have increased in these countries (see Chart 1). Uncertainty as to developments ahead has resulted in volatility in equity and bond prices in Norway and abroad (see Charts A.1 and A.2). Options prices also reflect greater uncertainty concerning equity price developments ahead (see Chart A.3).

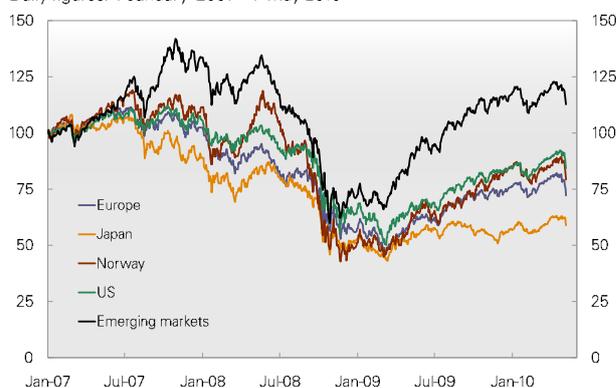
Until financial market turbulence returned developments were underpinned by improved macroeconomic conditions and continued government support in many countries. In mid-April 2010 the IMF pointed out that market and liquidity risk in money and capital markets had fallen, and prices within a number of asset classes have increased since October last year (see box on page 25).

Bond issue activity has been high (see Chart A.4). The volume of European covered bond issues has also picked up since the December report. Covered bonds are an important source of market-based funding for residential mortgages.

### Banks need more equity capital and long-term funding

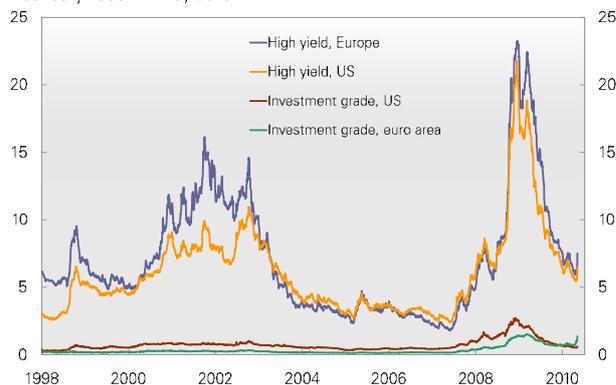
Substantial losses and writedowns during the financial crisis led to extensive deleveraging at financial institutions. From 2007 Q2 to the end of 2009, banks in the US and Europe recorded losses and writedowns on loan portfolios and securities amounting to about USD 1 500bn (see Chart A.5). The IMF expects banks to record further losses of USD 800bn in 2010.

Chart A.1 International equity indices. 1 January 2007 = 100. Daily figures. 1 January 2007 – 7 May 2010



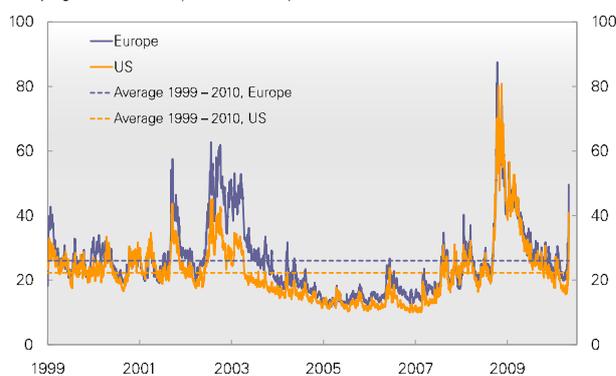
Source: Thomson Reuters

Chart A.2 Corporate credit spreads. Percentage points. Daily figures. 1 January 1998 – 7 May 2010



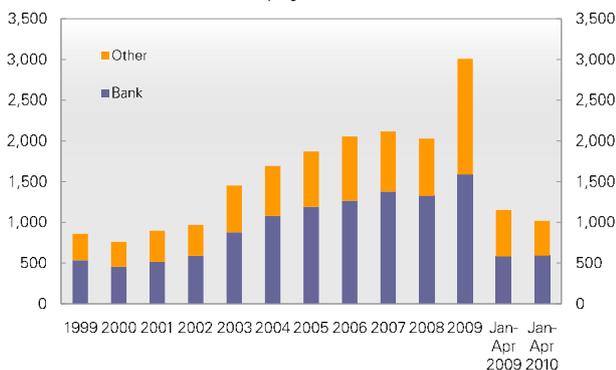
Source: Thomson Reuters

Chart A.3 Implied volatility derived from equity options. Per cent. Daily figures. 4 January 1999 – 7 May 2010



Source: Thomson Reuters

Chart A.4 Bonds issued by European companies. Total issuance in all currencies. In billions of USD. Daily figures. 1999 – 2010<sup>1)</sup>



1) As of April 2010.  
Sources: Bloomberg and Norges Bank

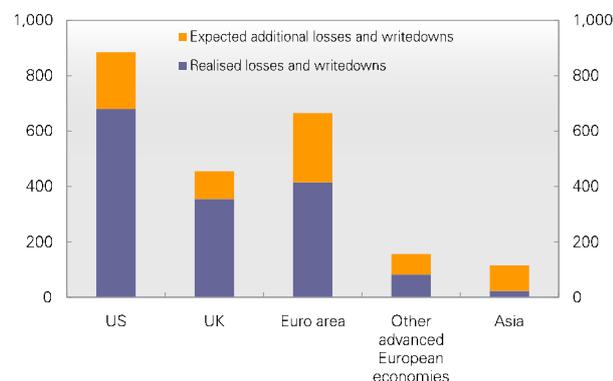
In the years leading up to the financial crisis, banks had incurred substantial short-term debt. During the financial crisis the cost of long-term funding increased and was in short supply, prompting banks to rely on short-term funding to an even greater extent. As a result, banks worldwide now hold an abnormally large amount of short-term debt that will have to be refinanced in the coming years (see Chart A.6).

In addition, bank capital and liquidity regulations will be tightened as well as solvency regulations for insurance companies (see Section C and box on page 32).

### Continued tight bank lending standards

To maintain capital adequacy levels, banks have reduced lending growth. After a long period of tightening, lending surveys show that most banks in the US and Europe are now maintaining lending standards unchanged at a tight level (see Chart A.7). Growth in lending to the non-financial sector has declined (see Chart A.8). The non-financial sector has to some extent reduced their share of bank funding in favour of bond and certificate funding.

Chart A.5 Banks' losses and writedowns. In billions of USD. Total for 2007 Q2 – 2010 Q4

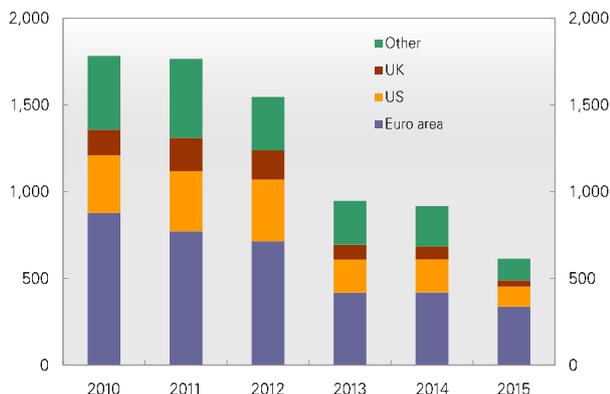


Source: IMF

### Deterioration in state finances

For some countries, government crisis-related measures have been costly and the downturn is adversely affecting government finances. Government debt in OECD countries will increase over several years ahead and may increase from 80% of GDP in 2008 to almost 120% in 2017 (see Chart 15).<sup>1</sup> Many countries must reduce government debt to alleviate the risk of a fiscal finance crisis.

Chart A.6 Bank debt rollover by maturity date. In billions of USD. 2010 – 2015



Sources: Moody's and IMF

There is now growing concern as to the possibility of sovereign debt default. Greece has been in particular focus, with both high sovereign debt and high budget deficits. Towards the end of 2009 and in April 2010 the three largest credit rating agencies downgraded Greece. In May 2010, Greece agreed on a loan of EUR 110bn from the euro area countries and the IMF. At the same time, the European Central Bank (ECB) agreed to accept for an unlimited period Greek government securities as collateral, regardless of credit rating.

1 For a further description, see Larsen and Støhølen: «Public finances – the difficult path back to sustainable levels» *Economic Commentaries* 2/2010, Norges Bank

According to BIS statistics, European banks have claims of nearly USD 3trn on the countries that have dominated the news due to weak government finances (Portugal, Italy, Ireland, Greece and Spain). German and French banks account for half of these claims.

### Reversal of measures

Extraordinary measures will eventually have to be withdrawn and monetary and fiscal policy will have to be tightened. Some of the measures have already been scaled back or withdrawn in pace with improved market conditions. For example, the ECB's latest allotments of 12-month and 6-month loans without an upper limit were made in December 2009 and March 2010, respectively. In the US, a number of measures have been unwound such as purchases of securitised residential mortgages.

It will always be difficult to determine the optimal timing for withdrawing measures. If withdrawal and tightening occur too rapidly, the improvement in macroeconomic and market conditions may be negatively affected. If stimulus measures are reversed too late or to an insufficient degree, government finances may weaken further in many countries. This may lead to renewed market turbulence.

### Global imbalances

The years leading up to the financial crisis were marked by low interest rates, limited losses, and a high degree of risk willingness. This fuelled the rise in asset prices and debt accumulation in the US and many European countries. Capital inflows from emerging market economies (EMEs) with high saving rates also contributed. Many EMEs sought to build up foreign exchange reserves in response to the Asian crisis and capital outflows from Asia in the 1990s. In line with the policy approach of Japan and South Korea in preceding years, a policy of export-led growth based on low cost levels and exchange rate stability was pursued. Over the past year, the decline in demand for goods and services in western economies has resulted in a reduction in US imports and Asian exports. In 2009, trade surpluses and deficits of the major economies were lower than observed for many years. Global trade imbalances are expected to increase again as economic activity picks up, but to remain at levels lower than observed prior to the crisis (see Chart A.9).

Chart A.7 Bank lending surveys in US and euro area. Percentage of banks that have tightened credit standards minus percentage of banks that have eased credit standards. Quarterly figures. 2003 Q1 – 2010 Q1

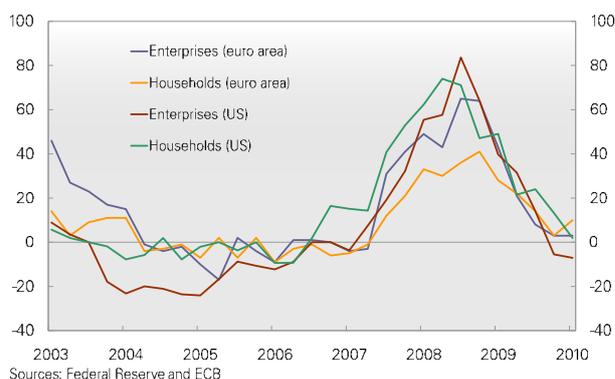


Chart A.8 Contributions to growth in credit to the non-financial private sector. Per cent. Year-on-year growth. Quarterly figures. 2008 Q1 – 2009 Q4

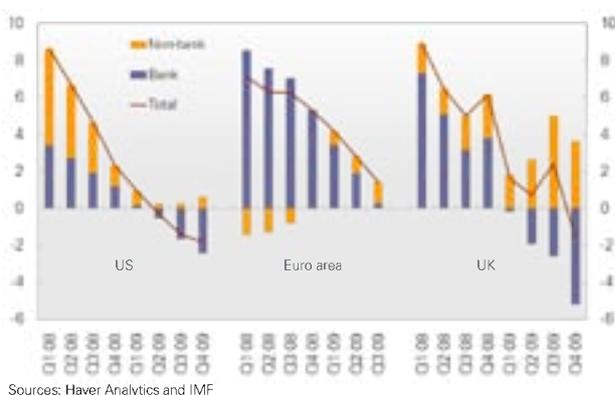
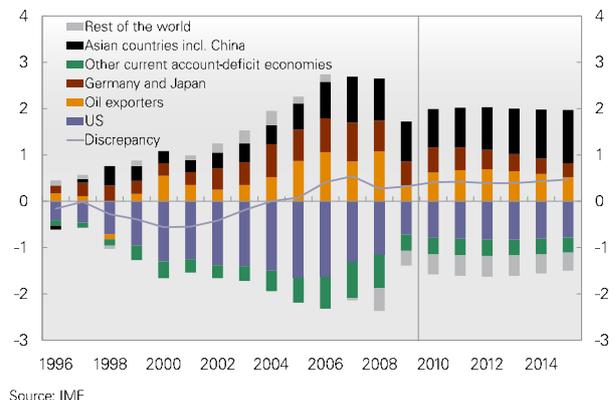


Chart A.9 Current account balance in per cent of world gross domestic product. Annual figures. 1996 – 2009. Projections for 2010 – 2015



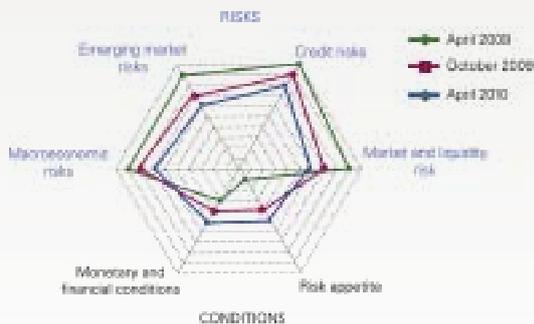
## The IMF Global Financial Stability Report

The International Monetary Fund (IMF) publishes the biannual *Global Financial Stability Report*. The report assesses conditions in the global financial system. The assessment is summarised in six factors that are of importance to financial stability (see Chart 1). In April this year, the IMF's assessment was that all the factors had improved in relation to October last year.

Lower *macroeconomic risk* reflects an upward adjustment of global growth prospects, while high sovereign debt in many countries constitutes a downside risk. Extraordinary government actions have contributed to improving *monetary and financial conditions*, which in turn has contributed to reducing *credit risk*. Investors' *risk appetite* has increased, and capital inflows to Asia

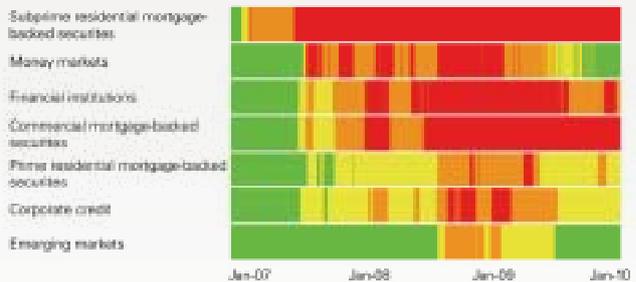
and Latin America have contributed to diminishing *emerging market risks*. *Market and liquidity risks* in money and capital markets have declined and price levels and price volatility within a number of asset classes have stabilised (see Chart 2). Some segments are still marked by the financial crisis, however, such as covered bonds for borrowers with low creditworthiness.

Chart 1 The IMF's Global Financial Stability Map<sup>1)</sup>



1) Risk: Closer to centre signifies less risk. Conditions: Farther from centre signifies improved monetary and financial conditions or increased risk appetite.  
Source: IMF

Chart 2 The IMF's Global Heat Map



The heat map measures both the level and month-to-month volatility of the assets, prices, and the total returns of each asset class relative to the average during 2003-06. The deviation is expressed in terms of standard deviations. Green signifies a standard deviation under 1, yellow 1-4 standard deviations, orange 4-5, and red greater than 5.

Source: IMF

## B. Improved earnings for Norwegian banks

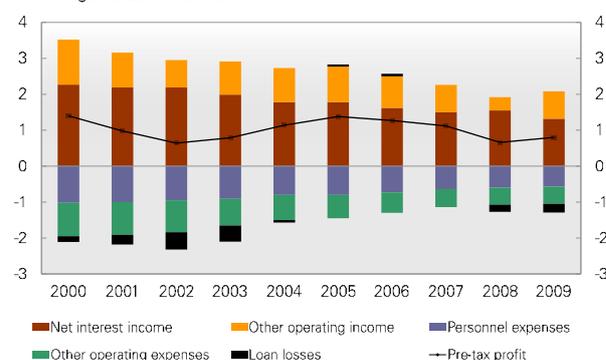
*Banks' earnings increased somewhat from 2008 to 2009. Retained earnings, equity issues and Tier 1 capital supply from the Norwegian State Finance Fund resulted in an increase in banks' Tier 1 capital ratio. Banks made some improvement in their liquidity situation in 2009.*

### Improved earnings for Norwegian banks

Banks' pre-tax profits increased somewhat from 2008 to 2009, mainly owing to increases in other operating income (see Chart B.1). Gains on trade in financial instruments were unusually high at the start of 2009. Net interest income fell from 2008 to 2009. Banks have more interest-bearing assets than interest-bearing debt. Lower interest rates in 2009 therefore pushed down net interest income. There was little change in personnel costs and other operating expenses from 2008 to 2009 measured against total assets. Loan losses were slightly higher in 2009 than in 2008. A large share of loan losses during 2008 Q4 were collective writedowns. These functioned as a buffer and, when economic prospects improved during 2009, there was a decrease in the need for further writedowns of loan losses. Collective writedowns constituted a smaller share of loan losses in 2009 (see Chart B.2). The banks that have so far presented first-quarter results for 2010 have posted favourable results (see Table 3 in Annex 3).

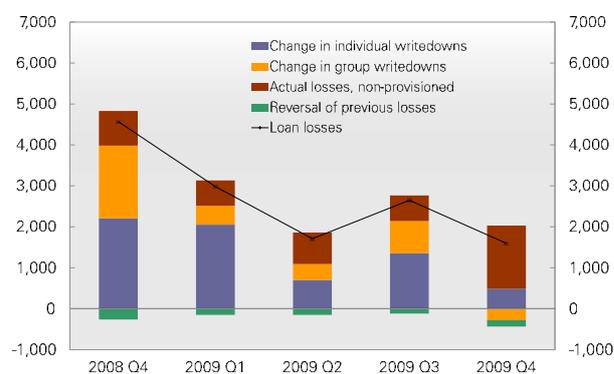
Banks' interest margin in relation to both enterprises and households fell slightly during 2009 (see Chart B.3). The interest margin in relation to enterprises is nevertheless higher than it was before the financial crisis. The lending margin fell during 2009, whereas the deposit margin rose (see Chart B.4). The continued low deposit margin reflects low interest rates and competition for deposits. Increased competition and lower credit risk (see Section D) have contributed to the fall in the lending margin.

Chart B.1 Banks<sup>1)</sup> pre-tax profits as a percentage of average total assets. Annual figures. 2000 – 2009



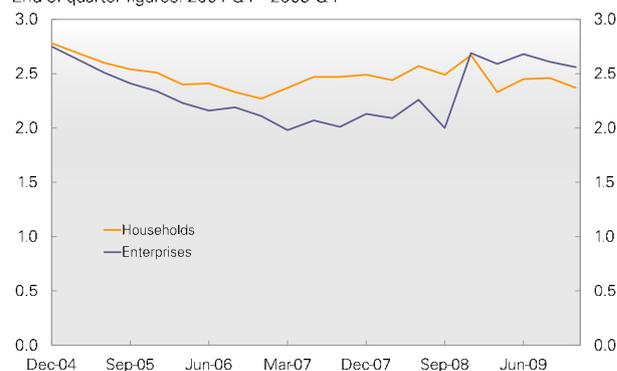
1) All banks excluding branches of foreign banks in Norway.  
Source: Norges Bank

Chart B.2 Components of banks<sup>1)</sup> loan losses. In millions of NOK. Quarterly figures. 2008 Q4 – 2009 Q4



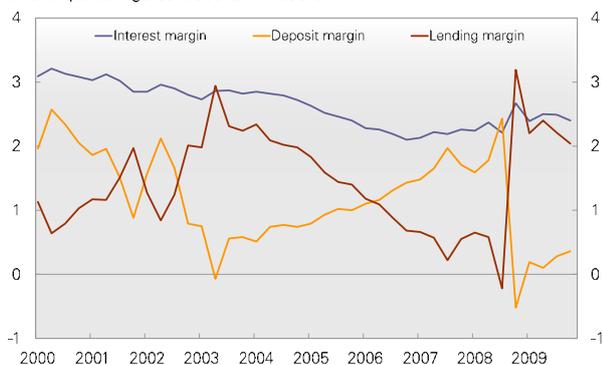
1) All banks in Norway.  
Source: Norges Bank

Chart B.3 Banks<sup>1)</sup> average interest margin. Percentage points. End-of-quarter figures. 2004 Q4 – 2009 Q4



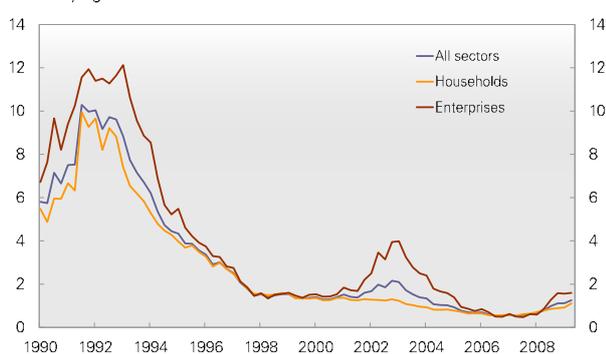
1) All banks in Norway.  
Source: Statistics Norway

Chart B.4 Banks<sup>1)</sup> average interest margin. Percentage points. End-of-quarter figures. 2000 Q1 – 2009 Q4



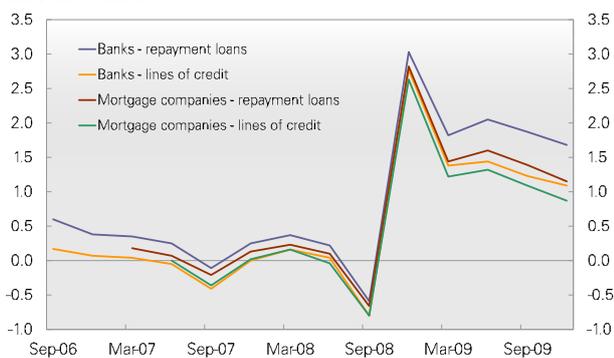
1) All banks in Norway.  
Source: Statistics Norway

Chart B.5 Banks and covered bond mortgage companies<sup>1)</sup> gross stock of non-performing loans by sector. Percentage of gross lending to the sector. Quarterly figures. 1990 Q3 – 2009 Q4



1) All banks and covered bond mortgage companies in Norway.  
Source: Norges Bank

Chart B.6 Banks and mortgage companies<sup>1)</sup> average lending margin on loans secured on dwellings. Percentage points. End-of-quarter figures. 2006 Q3 – 2009 Q4



1) All banks and mortgage companies in Norway.  
Source: Statistics Norway

A growing proportion of loans by banks and mortgage companies that issue covered bonds are in default, but the proportion is still far lower than it was during the 1988 – 1993 banking crisis (see Chart B.5). The default rate on loans to enterprises increased from 2008 Q3 to 2009 Q2, but has subsequently stabilised at a lower level than in the years from 2002 to 2004. The default rate on loans to households is growing, and is now at the same level as at end-2003.

Only DnB NOR Bank and Nordea Bank Norge have large loans to borrowers outside Norway. Both have considerable loans to international shipping. At end-2009, DnB NOR Bank's loans to shipping totalled NOK 123bn, constituting 21% of the banking group's loans to the corporate market. At the same time, Nordea Bank Norge's loans to shipping and offshore totalled NOK 43bn, constituting 17% of the bank's corporate loans. Loans to shipping involve a high average lending volume per engagement. A few problem engagements may therefore result in considerable loan losses. In 2009, the loss rate on loans to shipping was somewhat higher than the average loss rate on loans to the corporate market from DnB NOR Bank and Nordea Bank Norge.

Half of the DnB NOR Bank Group's loan losses during 2009 were in its part-owned subsidiary DnB NOR, which mainly has loan exposures in the Baltic countries and Poland. Although loan losses in DnB NOR were still high in 2010 Q1, there are signs of improvement. Loan losses have fallen since 2009 Q2, and the proportion of defaulted and doubtful loans in the Baltic countries is no longer on the rise. Loan losses of the two largest banks in the Baltic countries, the Swedish banks Swedbank and SEB, also fell in 2010 Q1. The sharp economic downturn in this region has resulted in high unemployment and falling domestic demand. Exports have now begun slowly to pick up. The IMF forecasts that the proportion of non-performing loans will remain at the same level in 2010 as in 2009, and then fall.

### Large transfers of mortgages to mortgage companies that issue covered bonds

During recent years, Norwegian banks have transferred many of their prime residential and commercial property mortgages to mortgage companies that issue covered bonds. A total of 40% of the mortgages have been transferred. DnB NOR Bank has transferred approximately 70% of its mortgages to DnB NOR Boligkreditt. The loans remaining on banks' balance sheets have higher average credit risk than the loans transferred to mortgage companies that issue covered bonds. A higher equity ratio in banks compensates for the increased credit risk.

The difference in credit risk for mortgages in mortgage companies that issue covered bonds and mortgages remaining in banks is reflected in default rates. While 1½ % of banks' loans to households were in default at end-2009, the corresponding figure for mortgage companies that issue covered bonds was only ½ %. The difference in credit risk is also reflected in the lending margin on the mortgages (see Chart B.6).

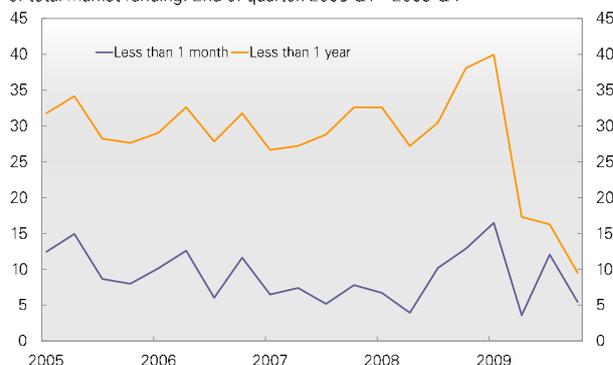
### Banks have reduced their liquidity risk somewhat

Banks can reduce their liquidity risk by means of more long-term funding and by building up a portfolio of highly liquid assets. Norwegian banks continued to increase their most liquid assets towards the end of 2009 (see Chart 12). In 2009 Q4, banks increased their holdings of treasury bills and deposits in central banks. A large proportion of the increase in most liquid assets since 2008 Q2 is due to treasury bills allotted in the swap arrangement. Around three quarters of banks' most liquid assets at end-2009 can be related to government measures.

Norwegian banks increased their short-term market funding in the second half of 2009. Net short-term market funding nevertheless fell because banks increased their short-term market assets (see Charts B.7 and B.8).

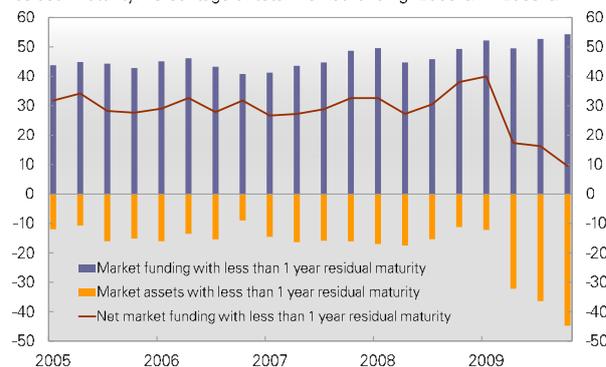
Covered bonds have become an important instrument for long-term funding of Norwegian banks. Viewed as a whole, banks and mortgage companies that issue covered bonds have increased market funding and have markedly reduced deposit funding during the last two years (see

Chart B.7 Banks<sup>1)</sup> net short-term market funding by residual maturity. Per cent of total market funding. End of quarter. 2005 Q1 – 2009 Q4



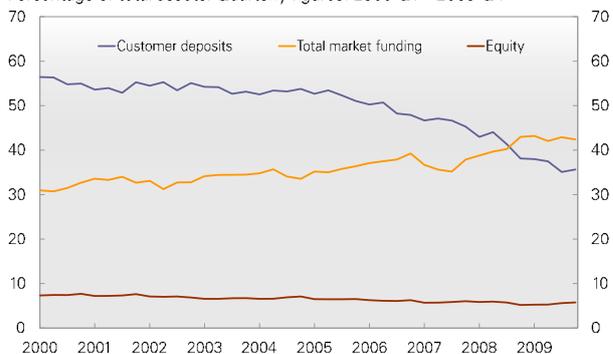
1) All banks excluding branches and subsidiaries of foreign banks in Norway.  
Source: Norges Bank

Chart B.8 Banks<sup>1)</sup> market funding and market assets with less than 1 year residual maturity. Percentage of total market funding. 2005 Q1 – 2009 Q4



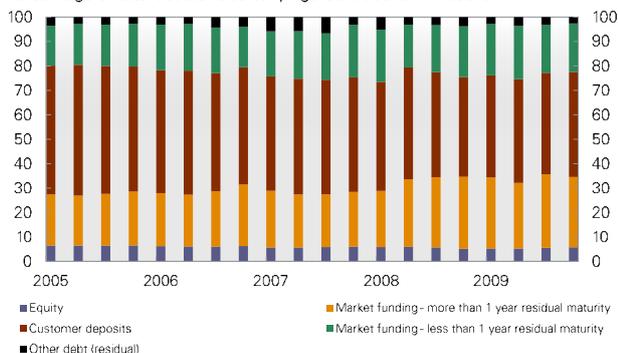
1) All banks excluding branches and subsidiaries of foreign banks in Norway.  
Source: Norges Bank

Chart B.9 Funding sources for banks and covered bond mortgage companies.<sup>1)</sup> Percentage of total assets. Quarterly figures. 2000 Q1 – 2009 Q4



1) All covered bond mortgage companies and all banks excluding branches and subsidiaries of foreign banks in Norway.  
Source: Norges Bank

Chart B.10 Funding sources for banks and covered bond mortgage companies.<sup>1)</sup> Percentage of total assets. Quarterly figures. 2005 Q1 – 2009 Q4



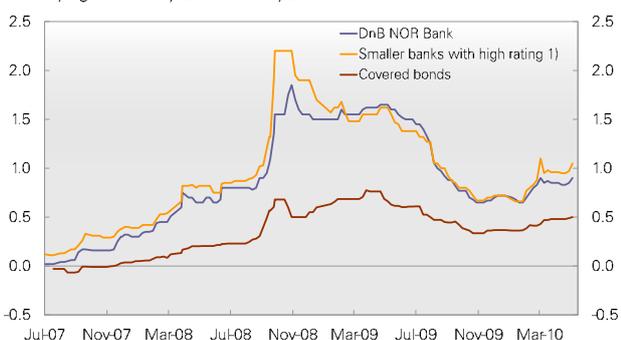
1) All covered bond mortgage companies and all banks excluding branches and subsidiaries of foreign banks in Norway.  
Source: Norges Bank

Chart B.11 Maturity profile for covered bond mortgage companies and banks<sup>1)</sup> long-term bond funding. Shares in per cent. As of 2009 Q2 and 2009 Q4



1) All covered bond mortgage companies and all banks excluding branches and subsidiaries of foreign banks in Norway.  
Source: Norges Bank

Chart B.12 Indicative risk premiums on 5-year Norwegian bank bonds and covered bonds. Spreads against swap rates. Percentage points. Weekly figures. 2 July 2007 – 5 May 2010



1) Banks with total assets between NOK 5 and 15bn and rated A by DnB NOR Markets.  
Source: DnB NOR Markets

Chart B.9). Market funding has also become somewhat more long-term (see Chart B.10). The maturities associated with long-term bond financing have increased during the last two quarters. At end-2009 Q4, over one-quarter of outstanding bonds had a residual maturity of over 5 years (see Chart B.11).

Borrowing in the Norwegian bond market has become more expensive for banks. Risk premiums have increased somewhat less for covered bonds than for bank bonds since the December report (see Chart B.12). The same is true of international markets. A number of factors may be responsible for these price rises. There may be contagion from international markets as a result of uncertainty concerning government finances in many European countries. Increased demand for long-term funding may have pushed up prices. Higher average credit risk in banks as banks transfer low-risk loans to mortgage companies that issue covered bonds may have pushed up the risk premiums on bank bonds, although increased credit risk is offset by higher equity ratios in banks. Amendments to Norges Bank's rules on collateral for loans have probably reduced the demand for Norwegian bank bonds maturing after 2012. Norges Bank accepts covered bonds as loan collateral. Reduced demand for bank bonds may therefore result in increased demand for covered bonds.

Through the swap arrangement, the government has purchased a considerable share of covered bonds. As the swap agreements mature, mortgage companies that issue covered bonds must refinance the bonds included in the swap agreements. The first large agreements in the swap arrangement will mature during the second half of 2011. Furthermore, the first long-term F-loan will mature in 2010 Q4 (see Chart B.13). Sales of covered bonds in the Norwegian market have so far been modest. Mortgage companies that issue covered bonds have placed somewhat more in the international market. Only the largest Norwegian banks and mortgage companies that issue covered bonds have access to the international market.

### Banks have reduced deposits in Norges Bank

All transactions between banks are settled in interbank systems. Interbank systems in Norway remained robust

during the turmoil in financial markets in autumn 2008. Over the past years, the systems in Norway have undergone considerable changes. There have been few flaws in the implementation of these changes, and accessibility has been high.

Norges Bank ensured that banks were provided with sufficient liquidity during the financial crisis. Banks borrowed from Norges Bank, and held substantial deposits in the central bank in this period (see Chart B.14). As confidence in counterparties increased and the money market began to function more normally in autumn 2009, Norges Bank discontinued the temporary relaxation of the rules on collateral for loans, and gave notice of some tightening of the rules. Banks' deposits in Norges Bank are now lower than in autumn 2008, but unutilised borrowing facilities are higher.

### Banks have increased their financial strength

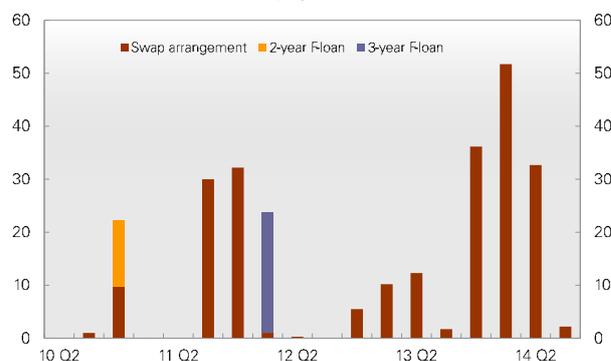
Norwegian banks increased their equity ratio and Tier 1 capital ratio in 2009 by retaining profits, issuing Tier 1 capital to the Norwegian State Finance Fund and issuing equity in the market (see Chart 13). Tier 1 capital supply from the Norwegian State Finance Fund was mainly provided in the form of Tier 1 perpetual bonds which are not regarded as equity. The Tier 1 capital ratio has therefore increased more than the equity ratio.

The largest banks have the lowest Tier 1 capital ratio. These banks and other banks with low Tier 1 capital ratios in 2008 increased their Tier 1 capital ratio in 2009. This can be seen from their position over the diagonal line in Chart B.15.

### The outlook ahead

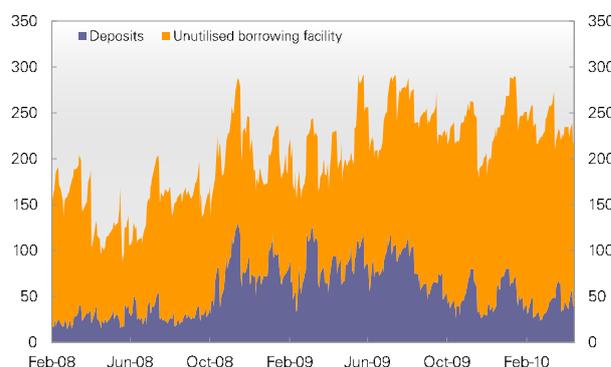
Banks' results in the years ahead are expected to be approximately the same as in 2009 (see Section E). There is, however, increased uncertainty concerning banks' results ahead, as high government debt in many countries has led to fresh turbulence in financial markets. With results similar to 2009, banks' Tier 1 capital ratio will be sufficient to operate normal lending activity. The proposed regulations may reduce the profitability of banks when they adapt to the new requirements (see Section C).

Chart B.13 Maturity profile for the swap arrangement and for longer-term F-loans. In billions of NOK. Quarterly figures. 2010 Q2 – 2014 Q3



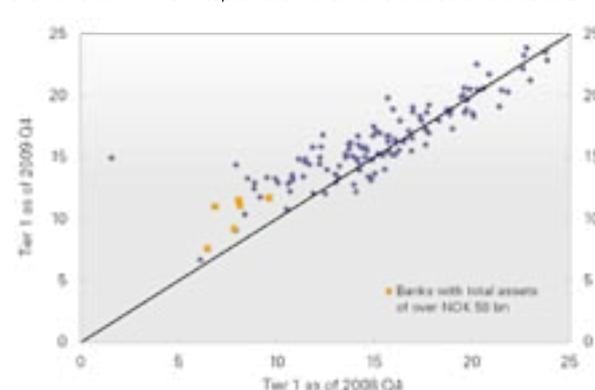
Source: Norges Bank

Chart B.14 Banks<sup>1)</sup> total deposits and unutilised borrowing facility at Norges Bank. In billions of NOK. End-of-day figures. 1 February 2008 – 15 April 2010



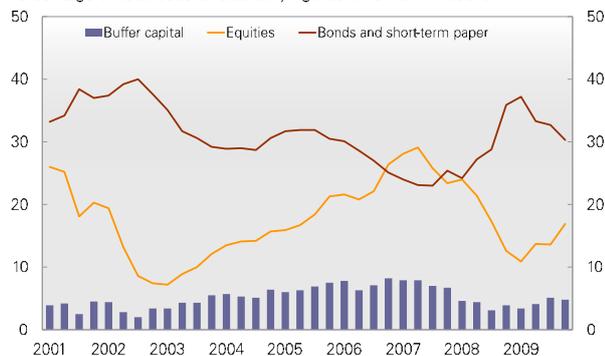
1) All banks in Norway.  
Source: Norges Bank

Chart B.15 Banks<sup>1)</sup> Tier 1 capital ratio. Per cent. As of 2008 Q4 and 2009 Q4



1) All banks excluding branches of foreign banks in Norway.  
Source: Norges Bank

Chart B.16 Life insurance companies' buffer capital<sup>1)</sup> and asset mix. Percentage of total assets. Quarterly figures. 2001 Q1 – 2009 Q4



1) Buffer capital is defined as the sum of the securities adjustment reserve, supplementary provisions with an upward limit of one year and surplus Tier 1 capital.  
Source: Finanstilsynet (Financial Supervisory Authority of Norway)

However, the banks' risk will be lower when they have adapted to the new requirements. In the somewhat longer term, this may reduce the premiums on banks' funding.

Overall, net interest income as a percentage of average total assets is expected to show a stable trend over the next years (see Chart E.7). Competition for mortgage customers is now again on the increase. This reduces lending margins. On the other hand, volume growth may result in increased net interest income in nominal terms. The renewed financial market turmoil may increase Norwegian banks' funding costs and reduce access to new funding, but the impact has so far been moderate.

Loan losses appear to have stabilised, and will probably be approximately as large in 2010 as in 2009, and then fall slightly until 2013 (see Chart E.6). Banks cannot expect equally high gains on financial instruments as at the start of 2009. Other operating income will therefore probably be lower during the next years. Owing to high lending growth, Norwegian banks have for a number of years been able to reduce their operating expenses as a share of total assets. In the event of lower growth ahead, new measures may be needed to improve efficiency.

### Improvements for life insurance companies

Improvements in securities markets resulted in a considerable increase in life insurance companies' return on capital in 2009. This contributed to an increase in their buffer capital (see Chart B.16).

The new solvency regulation for insurance undertaking (Solvency II) will enter into force on 1 January 2013. The new rules are intended to provide a greater match between the maturity of the companies' debt and assets. This will probably increase life insurance companies' holdings of assets with low credit risk and a long time horizon (see box below).

## Consequences of Solvency II for banks

Solvency II will change the risk weights used for the calculation of solvency and the principles for balance sheet valuation in insurance companies. In the current system, some of the companies' assets are assessed at market value and others at amortised cost. At the same time, insurance commitments are discounted at an interest rate derived from the return on government securities. In Solvency II, valuation at market value will apply to both the companies' insurance commitments (liabilities side of balance sheet) and assets (assets side). According to the new solvency regulations, capital requirements will vary with risk, including risk due to differences in interest-rate sensitivity between insurance commitments and the assets held to cover these commitments.

In life insurance companies, pension commitments will in particular be subject to new treatment. This applies to commitments in defined benefit pension agreements and paid-up policies. In these agreements, policy holders are guaranteed an annual minimum return (return guarantee). Pension obligations are extremely long-term, and are therefore sensitive to changes in interest rates when they are to be assessed at market value. The value of the commitments increases as the interest rate falls, and decreases as it rises. The value of assets swings in the opposite direction when interest rates change. If the interest-rate sensitivity of the commitments is higher than the interest-rate sensitivity of the assets, companies incur losses and a reduced solvency margin when the interest rate falls. This gives

insurance companies an incentive to invest in assets that have the same interest-rate sensitivity as the commitments.

Insurance companies are large investors in bank bonds (see Chart 11). Solvency II may alter access to funding for banks and enterprises. The new regulation will make bonds with long maturity and low credit risk attractive investments for life insurance companies, since such bonds will require a low equity ratio. Government bonds and covered bonds feature these properties. This may shift life insurance companies' demand away from bank and corporate bonds. Solvency II will make covered bonds more attractive as a source of funding, while ordinary bank bonds will be less attractive. The net effect of this for bank groups is therefore uncertain.

## C. New framework conditions for banks

*The European Commission has proposed tighter regulation of bank capital and liquidity management. The new regulation will make banks more robust. Impact analyses conducted by banks will form a basis for the final form of the new regulation. The aim is to implement new rules in the EU and EEA by end-2012. Transitional rules will ensure a gradual adaptation. The new regulation will change the framework conditions for banks in a number of areas.*

### **Tighter regulation of bank liquidity**

The financial crisis has shown that bank liquidity management has not been robust to money and capital market failure. No quantitative requirements are currently imposed regarding how assets are financed or how easily they can be realised. The European Commission therefore proposes the implementation of minimum requirements regarding both banks' liquidity buffers and the stability of their funding.

#### *1. Minimum requirements regarding banks' liquidity buffers*

The European Commission proposes a requirement that banks should be able to survive a period of 30 days of substantial deposit withdrawals without supply of fresh funding or fresh liquidity from the central bank. In the stress test, withdrawals of less stable deposits are greater than those of stable deposits. Deposits from large enterprises are regarded as less stable than deposits from the retail market and small and medium-sized enterprises.

Many assets that banks held for liquidity purposes were not particularly liquid during the crisis. In the proposal from the European Commission, assets will only be regarded as liquid if they can easily be realised – including in situations involving market stress. There are two proposals for the definition of liquid assets. In the narrow definition, government and government-guaranteed certificates and bonds and deposits in central banks are included. In the broad definition, half of the liquidity

buffer can consist of covered bonds and corporate bonds if they meet the requirements regarding liquidity. These include the requirement that the security is traded in a large and active market where the difference between the security's purchase and sales price has not been more than 50 basis points over the last ten years. On the basis of such a requirement, Norwegian covered bonds would not qualify for the liquidity buffer. During the financial crisis, there were several cases where no prices were quoted for such securities.

We have conducted a stress test of Norwegian banks' liquidity buffers resembling the stress test in the proposal from the European Commission (see the requirements set out in Chart C.1). Calculations show that 34 of the 137 banks in Norway had a liquidity buffer at end-2009 that was large enough to comply with the requirements of such a stress test (see Chart C.2).

The banks' risk will be lower when they have adapted to the new requirements. This may reduce the premiums that banks pay for their funding. In addition, the increase in funding costs and price losses on securities may be lower next time markets fail. However, more long-term funding, which is normally more expensive than short-term funding, and low returns on liquid assets, may in the short term put pressure on the profitability of banks when they adapt to the new requirements. In order that the Norwegian banks shall collectively comply with the requirements of the stress test, they must either reduce their holdings of market funding that matures within one month by over NOK 100bn or increase the liquidity buffer correspondingly (see Chart C.3).

According to a rough estimate, banks' annual funding costs may increase by NOK 0.5–1bn in the short term if they replace their short-term funding with more long-term funding in order to comply with the requirement.<sup>1</sup> If banks

<sup>1</sup> It is uncertain how banks will adapt to the liquidity buffer requirement. If banks replace their short-term funding with funding of only slightly longer maturity, they must, in order to comply with the requirement, replace a larger share of their short-term funding as the funding matures. To evaluate the effect of different responses in terms of bank funding, we use average indicative risk premiums from DnB NOR Markets and NIBOR rates in the period 1 January 2009 to 5 May 2010. We assume that banks must replace funding with an original average maturity period of around two weeks with new funding with an average maturity period of up to one year.

instead adapt to the requirement by increasing the liquidity buffer, and finance this by means of fresh long-term funding, this will be considerably more costly.<sup>2</sup> Banks may also finance the increase in the liquidity buffer by selling less liquid certificates, bonds and loans. Access to funding for other banks and enterprises may then be weakened.

In the proposal from the European Commission, the liquidity buffer should meet the bank's liquidity requirement in different currencies. The proposal will probably entail that the banking sector in many countries must hold a larger share of outstanding government debt. In Norway, the swap arrangement that was implemented in autumn 2008 considerably increased banks' holdings of government securities. At end-2008 Q3, Norwegian banks owned approximately 5% of Norwegian government securities. By end-2009, the share had increased to approximately 30%. If Norwegian banks increase their holdings of government securities by more than NOK 100bn in order to comply with the requirements of the stress test, the share will increase to more than 50%. A gradual adaptation to the new requirements may curb the effects on the price of government securities.

## 2. Minimum requirements regarding banks' stable funding

The European Commission also proposes a requirement that all less liquid assets shall be financed by stable and long-term funding. Banks should be able to survive a full year of limited access to fresh funding and substantial deposit withdrawals.

We have carried out a stress test of Norwegian banks' stable funding resembling the stress test in the proposal from the European Commission (see requirements set out in Chart C.4). The stress test indicates that the vigorous growth of banks from 2003 to 2007 was not soundly financed. Calculations show that only 12 of the 137 banks in Norway had sufficient long-term and stable funding at end-2009 to comply with the requirements of such a stress test (see Chart C.5). Stable funding is here defined as

2 If we assume that banks finance the purchase of three-year government bonds by issuing three-year bank bonds or covered bonds, average interest rates for the period 1 January 2009 to 5 May 2010 indicate a potential reduction of NOK 1.4-2.1bn in banks' net interest income.

Chart C.1 Preconditions for compliance with liquidity buffer requirement<sup>1)</sup>. Weights in per cent

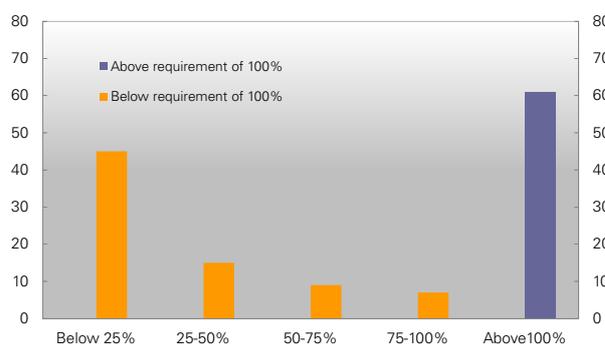
	Weight
<b>Numerator: liquid assets</b>	
Deposits in central banks. Government and government-guaranteed short-term paper and bonds	100
<b>Denominator: liquidity needs (items with maturity &lt; 1 month)</b>	
Stable deposits <sup>2)</sup>	75
Less stable deposits from households, small enterprises and the public sector <sup>3)</sup>	15
Less stable deposits from large enterprises <sup>3)</sup>	75
Net deposits and borrowing from credit institutions	100
Net debt related to short-term paper, bonds, subordinated debt	100

1) Liquid assets / Liquidity needs > 100 %.

2) Deposits covered by deposit guarantee up to NOK 1m. Amount intended to be equivalent to the maximum amount in the proposed EU Capital Requirements Directive (EUR 100 000).

3) Dividing line between small and large enterprises at annual turnover of NOK 400m.

Chart C.2 Banks' <sup>1)</sup> liquid assets as a percentage of required liquid assets<sup>2)</sup>. Number of banks. 31 December 2009

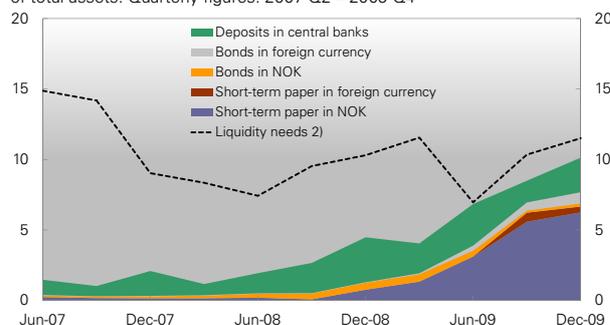


1) All banks in Norway except branches of foreign banks.

2) See Chart C.1.

Source: Norges Bank

Chart C.3 Norwegian banks' <sup>1)</sup> government and government-guaranteed bonds and short-term paper and deposits in central banks. As a percentage of total assets. Quarterly figures. 2007 Q2 – 2009 Q4



1) All banks in Norway except branches of foreign banks.

2) Liquidity needs are calculated based on preconditions for compliance with liquidity buffer requirement in Chart C.1.

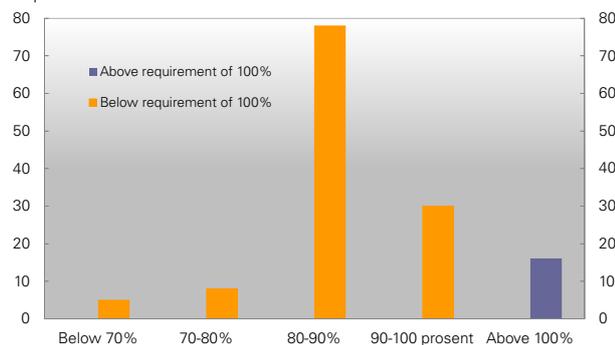
Source: Norges Bank

Chart C.4 Preconditions for compliance with stable funding requirement<sup>1)</sup>. Weights in per cent

Balance sheet item	Weight
<b>Numerator: stable funding (high weight = stable)</b>	
Equity capital, deposits and other debt. Residual maturity > 1 year	100
Stable deposits. Residual maturity < 1 year	85
Less stable deposits from households, small enterprises and the public sector. Residual maturity < 1 year	70
Less stable deposits from large enterprises. Residual maturity < 1 year	50
Other debt. Residual maturity < 1 year	0
<b>Denominator: less liquid assets (high weight = less liquid)</b>	
Short-term paper and bonds. Deposits in and lending to credit institutions. Residual maturity < 1 year	0
Government securities. Residual maturity > 1 year	5
Lending to enterprises. Residual maturity < 1 year	50
Lending to households. Residual maturity < 1 year	85
Other assets	100

1) Stable funding / Less liquid assets > 100%.

Chart C.5 Banks<sup>1)</sup> stable funding as a percentage of stable funding requirement<sup>2)</sup>. Number of banks. 31 December 2009

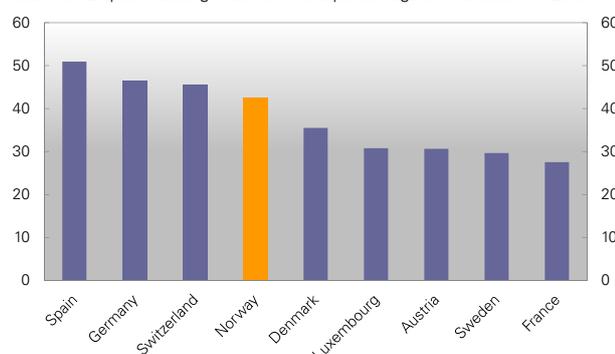


1) All banks in Norway except branches of foreign banks.

2) See Chart C.4.

Source: Norges Bank

Chart C.6 Deposit funding in banks<sup>1)</sup>. As a percentage of total assets<sup>2)</sup>. 2008



1) Figures for Norway apply to all banks except subsidiaries and branches of foreign banks in Norway.

2) Consolidated figures.

Sources: OECD and Norges Bank

stable deposits or funding with a maturity of over one year. Norwegian banks must increase their holdings of stable funding by more than NOK 500bn in order to comply with the requirements of the stress test. Simple calculations show that, in the short term, Norwegian banks' annual funding costs may increase by approximately NOK 7bn if the whole increase is based on long-term market funding.<sup>3</sup> The calculations do not take into account that premiums on banks' funding in the somewhat longer term will probably fall because bank risk will be lower when they have adapted to the new requirements.

Compared with other countries, Norwegian banks are largely financed by deposits (see Chart C.6). Which deposits can be classified as stable and which must be regarded as less stable is therefore of crucial importance to Norwegian banks. Deposits covered by a deposit guarantee are not automatically regarded as stable in the proposal from the European Commission. In our consultative comments of 16 April 2010, we expressed the view that all covered deposits should be treated equally.

### Tighter regulation of banks' financial strength

Banks are currently subject to a minimum capital requirement stating that Tier 1 capital shall constitute at least 4% of risk-weighted assets. The rules require that at least half of Tier 1 capital shall be equity capital.

During the financial crisis, market requirements regarding bank capital increased considerably. Banks were forced to improve their financial strength while losses were large and access to capital was low. This resulted in a tightening of banks' credit standards and exacerbated the decline. In many cases, the market now imposes considerably more stringent requirements for bank capital than government regulations.

The European Commission proposes further amendments to capital regulations:

3 It is uncertain how banks will adapt to the requirement of stable funding. To evaluate the effect of different responses in terms of bank funding, we use average indicative risk premiums from DnB NOR Markets and NIBOR rates in the period 1 January 2009 to 5 May 2010. We assume that banks must replace funding with an original average maturity period of around three months with new funding with an average maturity period of around five years.

### 1. More stringent Tier 1 capital requirements

During the financial crisis banks' Tier 1 capital could not be used to absorb losses to a sufficient extent in many countries. Too much of the Tier 1 capital consisted of hybrid capital with little loss-bearing capacity and various intangible assets. According to the proposal for new regulations, all Tier 1 capital shall be able to absorb losses on a going concern basis. Moreover, deductions for intangible assets are to be harmonised.

The proposals have little effect on Norwegian banks, which are already subject to strict rules for Tier 1 capital. In Norway, hybrid capital may not constitute more than 15% of Tier 1 capital<sup>4</sup>. Most Norwegian banks thus have a sound starting point if the requirements regarding the quality of Tier 1 capital are tightened (see Chart C.7).

In our consultative comments, we expressed the view that it would be an advantage if the Tier 1 capital requirement were even tighter. If only equity capital (after deduction of intangible assets) is regarded as Tier 1 capital, all Tier 1 capital will have the same loss-bearing capacity on a going concern basis, thereby simplifying the definition.

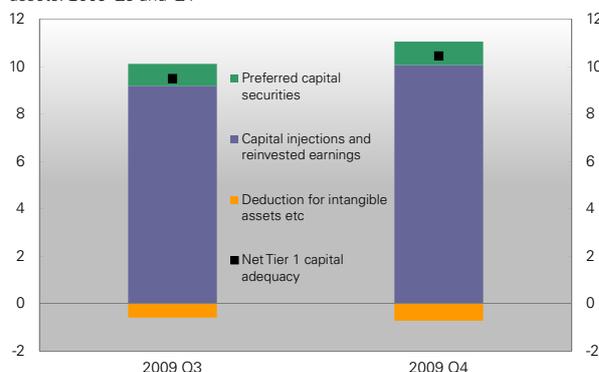
### 2. More stringent capital requirements for counterparty risk

The European Commission proposes more stringent capital requirements for counterparty risk in financial transactions between financial institutions. The proposals would have little effect on Norwegian banks.

### 3. Requirements regarding banks' equity ratio

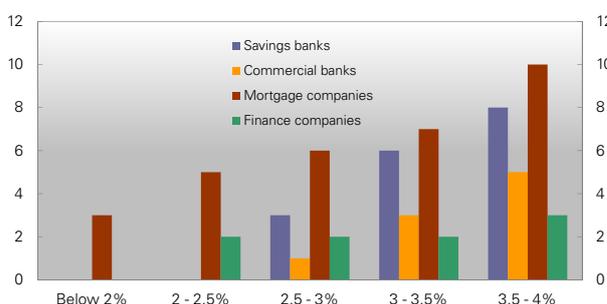
Under Basel II, the largest banks use their own models to calculate capital requirements for the various lending portfolios. The risk models have increased the calculated Tier 1 capital ratio of the largest banks, but their equity ratio is low. We have seen that there may be a considerable difference between the risk in models and the actual effects that can be observed later. The European Commission proposes implementation of minimum requirements regarding financial institutions' equity capital viewed in relation to total assets including off-balance

Chart C.7 Tier 1 capital in Norwegian banks<sup>1</sup>. Percentage of risk-weighted assets. 2009 Q3 and Q4



1) All banks except branches of foreign banks in Norway.  
Sources: Finanstilsynet (Financial Supervisory Authority of Norway) and Norges Bank

Chart C.8 Distribution of financial institutions in Norway<sup>1</sup> by equity ratio<sup>2</sup>, 2009 Q1



1) Measured as a share of total assets, the financial institutions in the chart cover 79% of the savings banks, 90% of the commercial banks, 94% of the mortgage companies and 8% of the finance companies. Branches of foreign financial institutions are not included.  
2) Equity capital / non-risk weighted exposure. Non-risk weighted exposure includes items not recognised on balance sheet.  
Source: Finanstilsynet (Financial Supervisory Authority of Norway)

<sup>4</sup> Preferred capital securities issued by the Norwegian State Finance Fund may constitute a further 20% of Tier 1 capital

sheet commitments. The requirement shall apply at company level. Such an unweighted equity capital requirement limits the number of times a bank can leverage equity capital. The requirement may also compensate for deficiencies in the regulations and in the risk models.

Norwegian banks have higher equity ratios than many foreign banks. In 2009, Finanstilsynet participated in a European study to calculate the effects of equity ratio requirements. No Norwegian banks had an equity ratio of less than 2.5% at end-2009 Q1 (see Chart C.8). The unweighted requirement may however be binding for Norwegian mortgage companies with a low equity ratio. This may curb the rise in house prices and debt (see box on page 38).

#### *4. Tighter regulation of systemically important banks*

The European Commission is considering tighter regulation of systemically important banks. Creditors may perceive large banks as being in practice “insured” by the authorities. This is also reflected in credit rating agencies’ assessments. Banks regarded as systemically important receive a higher rating. This results in lower borrowing costs for these banks, and makes it easier for them to increase borrowing and to grow even larger. It is thus important that satisfactory systems exist for crisis management and for winding up of systemically important banks where bank creditors must absorb losses.

Tighter regulation of systemically important banks, for example by introducing higher capital or liquidity requirements for such banks than those that apply to other banks, will reduce the number and size of such banks and the probability of failure. Another solution may be that systemically important banks pay a higher fee to the Norwegian Banks’ Guarantee Fund.

#### *5. Banks must build up large buffers during good times*

Current regulations are instrumental in causing bank behaviour to accentuate fluctuations in the economy. During downturns, borrowers’ debt-servicing capacity is weakened and the value of banks’ collateral is reduced. The growing risk of bank losses results in upward adjustment of the risk weights used to calculate the minimum

capital requirement, and the minimum capital requirement increases. The shorter the data series applied in banks’ risk models are, the more the capital requirement fluctuates with the business cycle. The impact can be appreciable. Higher capital requirements for banks during a downturn will amplify the downturn, while the opposite applies during an upturn.

The European Commission has proposed a requirement that banks maintain a capital buffer beyond the minimum requirement for capital adequacy. If the capital slips below the buffer requirement, banks will have to limit payments of dividends and bonuses. The buffer requirement is designed to help ensure that banks build up good buffers during normal times. They are then able to absorb losses during downturns without needing to raise more equity capital. This may counteract banks’ rationing of credit in bad times. The level of the buffer may depend on indicators such as credit growth in the economy. This will require the banking system to build up capital reserves when credit growth is high, and thus have a counter-cyclical effect.

#### **Overall effects of new regulations**

In order to ensure that new regulations function according to intentions, it is important that the overall effects are carefully assessed. The regulations may increase banks’ costs, particularly during upturns, but will help to reduce the procyclicality of banking behaviour. Banks will also be less vulnerable to market failure if they increase their liquid assets and long-term funding. More equity capital in banks will in isolation reduce the risk for bond holders, while at the same time weakening return on equity. In conjunction with limitations on dividend payments, this may reduce the supply of equity capital to banks. Banks may however pass on higher costs to their borrowers by increasing their lending margin on loans to households and enterprises.

## The effects of new capital regulation on banks' lending growth

Changes in capital regulation may affect banks' lending growth. Higher risk weights on mortgages may curb banks' eagerness to grant mortgages. Simple calculations show that, if the capital requirement for mortgages doubles, banks will have to increase their mortgage interest rate by approximately half a percentage point in order to maintain return on equity.<sup>1</sup> Calculations indicate that household debt could have been approximately 3% lower in 2008 if mortgage interest rates had been half a percentage point higher from 2003. The same increase in mortgage interest rates could have left house prices approximately 4% lower in 2008.

The effect of a buffer requirement for lending growth (see Section C) depends on how much the requirement increases from bad to good times, and to what extent banks are willing to allow the capital to fall

below the buffer requirement. In the interest of their reputation and access to funding, banks would probably regard the buffer requirement as the minimum requirement for capital adequacy in normal times. An increase in the buffer requirement that in practice doubles the total minimum requirement for capital adequacy will then have approximately the same effect on house prices and debt as a doubling in the capital requirement for mortgages. However, banks with capital approaching the minimum requirement have stronger incentives to reduce their loans with high capital requirements than mortgages, which have very low capital requirements. This indicates that the effect of an increase in the total minimum requirement is smaller for mortgages and house prices.

An equity ratio requirement in banks may also curb the rise in house

prices and debt if it is binding for banks. If the unweighted requirement is set at 3% and if it is also binding, the risk weight associated with a minimum Tier 1 capital requirement of 4% would in reality be at least 75% on all new loans. For banks that use internal models (IRB approach), this constitutes approximately six times the capital requirement for mortgages. The capital requirement for mortgages in banks using the standardised approach, which has more stringent capital requirements for mortgages, will at the same time be approximately doubled.

<sup>1</sup> Assumes that a bank finances 50% of its mortgages by means of deposits. The remainder of its mortgages are financed by means of three-year covered bonds. The calculations are based on data from end-2009. We have used figures for average mortgage interest rates and deposit rates from Statistics Norway and indicative risk premiums from DnB NOR Markets. Assumptions on the costs of portfolio management are based on figures reported from mortgage companies that issue covered bonds.

## New accounting rules for valuation of financial assets

Lessons learned from the financial crisis have resulted in changes in the accounting rules for valuation of financial assets. In November 2009, the International Accounting Standards Board (IASB) published a proposal for a new standard for valuation of financial assets. The new standard will probably enter into force on 1 January 2013.

Under the current accounting rules, a financial asset is only written down in the case of a loss event affecting future cash flow which can also be reliably measured. Regardless of the degree of probability, anticipated losses on specific loans may not be recognised in the accounts until a loss event occurs. Banks that apply the international accounting stand-

ard (IFRS) therefore only recognise incurred losses. Changes in the assessment of credit risk are thus not captured in banks' accounts.

Recognition of incurred losses only may amplify fluctuations in the economy. Since most loss events occur in bad times, banks increase their loss provisions when the economic

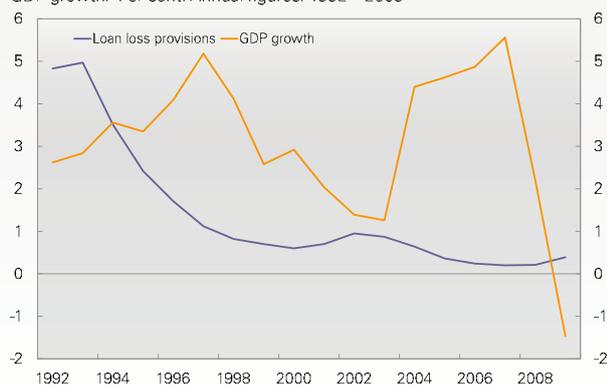
falls (see Chart 1). This may cause banks to restrict lending in order to maintain capital adequacy. Sound investment projects may then be postponed, amplifying the downturn. Correspondingly, banks' recorded losses are often too low in periods of expansion, when there are few loss events and future losses are not taken into consideration. This may lead to high dividends for the company's owners and weaken the bank's capacity to bear future losses. Loss-bearing capacity may also be reduced if overestimated results entail increased lending. Lending growth may thus be too high during upturns.

The new proposal aims to replace the current loss model with a model where financial assets carried at amortised cost are written down on the basis of expected losses on the asset. The first time a loan is recorded in the banks' accounts, the expected loan loss is distributed over the maturity of the loan. This might result in more stable write-downs from year to year and help to reduce the procyclicality of bank behaviour.

Although book losses will probably be more stable under the proposed accounting rules than under the current rules, book losses will vary over time if expectations regarding future

losses change during the maturity of the loan. The effect of new expectations is to be recorded immediately in the accounts. The price of insuring credit risk may give an indication of how the market's expectations regarding future loan losses develop over time. This price has fluctuated considerably in recent years (see Chart 2). Book losses will nevertheless be less volatile if banks have to use loss experiences over a long period of time when estimating expected loan losses. In the proposed accounting standard it is unclear how loss experiences should be used to estimate expected losses.

Chart 1 Loan loss provisions as a percentage share of banks' total lending and GDP growth. Per cent. Annual figures. 1992 – 2009



Sources: Statistics Norway and Norges Bank

Chart 2 CDS prices. 10 years. Basis points. Daily figures. 1 January 2005 – 7 May 2010



Source: Bloomberg

## D. Moderate improvement in the outlook for Norwegian borrowers

*Credit risk on corporate loans has fallen slightly since the December report. Debt-servicing capacity has improved somewhat and there is a lower risk of default. Potential losses have declined owing to a reduction in corporate debt and an increase in enterprises' equity capital. The situation for commercial property and shipping is still demanding, but the outlook has improved somewhat since the December report.*

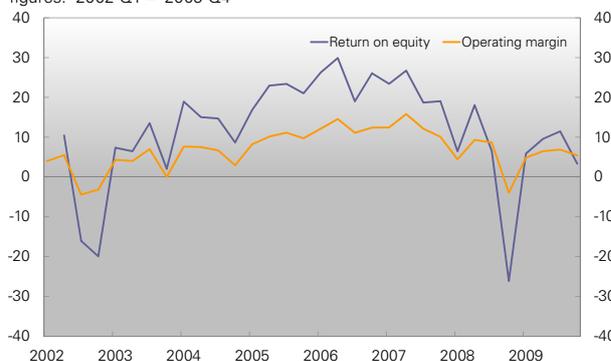
*Household credit risk is in the short term about unchanged on the previous report. Households saved a high share of disposable income in 2009. The rise in the debt burden has eased somewhat. Higher residential mortgage rates may weaken debt-servicing capacity ahead.*

### D. 1 Enterprises<sup>1</sup>

#### Moderate results

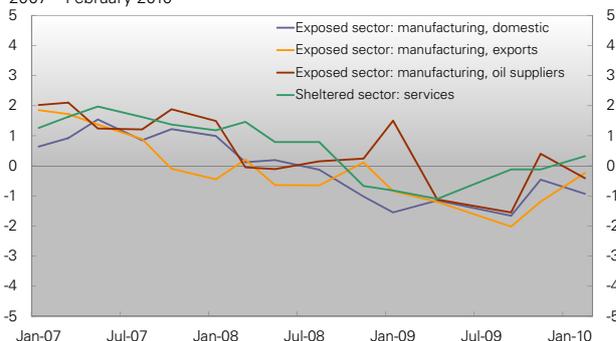
Operating margins for listed enterprises have stabilised at a moderate level (see Chart D.1). In 2009 Q4 operating margins were somewhat below the average for the past eight years. However, ordinary pre-tax profits fell considerably owing to the negative result for financial items, which led to low returns on equity capital. Approximately half of the listed enterprises posted negative results in 2009 Q4. The weakest developments were in the exposed sector (see Chart D.2). The sector consists both of internationally exposed export and import industries. The sharp fall in activity among our trading partners in 2009 resulted in lower demand for Norwegian export products. Low external demand, high labour costs compared with trading partners and the krone appreciation led to weak results in many export industries. Petroleum sector suppliers and the maritime construction industry are examples of such

Chart D.1 Key ratios for enterprises listed on Oslo Børs<sup>1</sup>. Per cent. Quarterly figures. 2002 Q1 – 2009 Q4



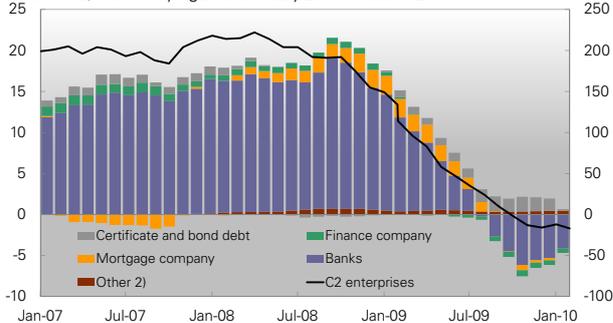
1) Sample consisting of 141 listed non-financial enterprises as of 2009 Q4. Statoil is not included in the sample.  
Sources: Statistics Norway and Norges Bank

Chart D.2 Operating margins<sup>1</sup> in various industries. Per cent. January 2007 – February 2010



1) The chart shows growth in operating margins over the past three months compared with the corresponding period last year. The scale runs from -5 to 5, where "-1" corresponds to approximately 5% to 15% decline in operating margins.  
Source: Norges Bank's regional network

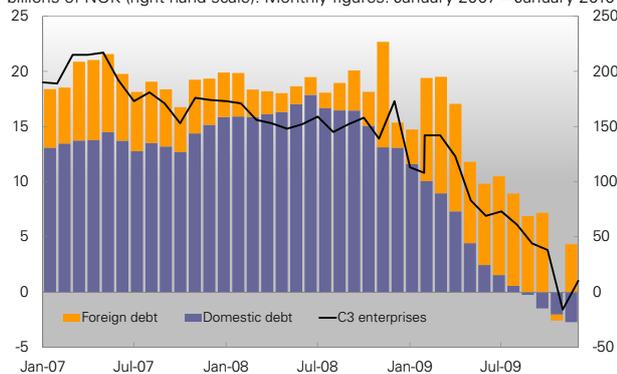
Chart D.3 12-month growth in credit (C2) to enterprises in per cent (left-hand scale). Contribution from various sources of funding in billions of NOK (right-hand scale)<sup>1</sup>. Monthly figures. January 2007 – March 2010



1) Not including retained earnings and equity issues. Not adjusted for exchange rate fluctuations.  
2) Loans from insurance companies, state lending institutions and pension funds.  
Source: Statistics Norway

1 Non-financial corporations

Chart D.4 12-month growth in credit (C3) to mainland enterprises in per cent (left-hand scale). Contribution of domestic and foreign sources of funding in billions of NOK (right-hand scale). Monthly figures. January 2007 – January 2010



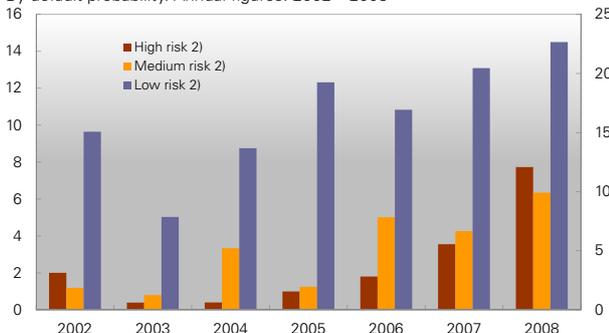
Source: Statistics Norway

Chart D.5 Indicative risk premiums on Norwegian 5-years corporate bonds. Spread against swap rate. Banks' lending margins on loans to enterprises. Spread against 3-month money market rate. Percentage points. Quarterly figures. 2007 Q1 – 2010 Q1<sup>1)</sup>



1) Lending margins on bank loans are projected for 2010 Q1.  
Sources: DnB NOR Markets, Statistics Norway and Norges Bank

Chart D.6 Corporate<sup>1)</sup> bond debt as a percentage of total bank and bond debt. By default probability. Annual figures. 2002 – 2008



1) Public administration and oil and gas production not included.  
2) In enterprises with low risk the likelihood of default is less than or equal to 1 per cent. In enterprises with high risk the probability of default is 5 per cent or higher.  
Source: Norges Bank

industries. At end-2009, bank debt in exposed sectors constituted approximately 40% of total corporate bank debt. Export industries' share of this was again around 60%.

### Reduced debt

Growth in domestic corporate debt has continued to slow since the December report. At the end of March, 12-month growth was negative for the fifth consecutive month (see Chart D.3). An increase in foreign corporate debt contributed to positive 12-month growth in total debt (C3) in January (see Chart D.4). Enterprises' foreign debt varies somewhat from month to month, partly as a result of variations in companies' short-term internal debt at group level.

Bank loans in particular have pulled down growth in domestic debt (see Chart D.3). According to Norges Bank's Survey of Bank Lending, banks have eased their credit standards for enterprises somewhat in recent quarters by reducing lending margins. Lending margins for bank loans have nevertheless fallen less than risk premiums on corporate bonds (see Chart D.5). Certificate and bond issues have reduced the fall in domestic debt to some extent (see Chart D.3). It is the large and medium-sized enterprises that primarily use the Norwegian securities market as a source of funding. Enterprises with low risk have the largest share of bond debt (see Chart D.6). However, in recent years, bond debt has increased most in enterprises with the highest risk exposure.

In the latest lending surveys, banks have reported that corporate loan demand is rising. At the same time, several factors point to continued low corporate loan demand. Investment has declined appreciably in several industries and is expected to fall further. New manufacturing orders were halved between 2007 and 2009. The fall in corporate asset values has led to a need for balance-sheet restructuring among companies with considerable bank debt before they can raise new loans.

### Debt-servicing capacity has improved

Enterprises improved their debt-servicing capacity in 2009 (see Chart D.7). This was helped by higher earnings and reduced debt during the second half of 2009. However, there are wide differences between enterprises. About

18% of enterprises had negative debt-servicing capacity in 2009 (according to accounts from around 5% of enterprises). Enterprises with negative debt-servicing capacity must draw on their liquidity buffers in order to service their debt. At end-2008, enterprises' liquidity buffer was considerably lower than during the 1988 – 1993 banking crisis (see Chart D.8). At the same time the share of bank deposits and cash, considered to be the most liquid assets, has been more stable.

The number of bankruptcies in 2010 Q1 was 15% lower than in the same period in 2009. Historically, the bankruptcy rate has lagged in relation to debt-servicing capacity (see Chart D.7). Banks have so far shown a flexible attitude to existing customers who have breached loan terms during the financial crisis. This has probably somewhat reduced the number of bankruptcies and banks' actual losses.

### Increased equity capital

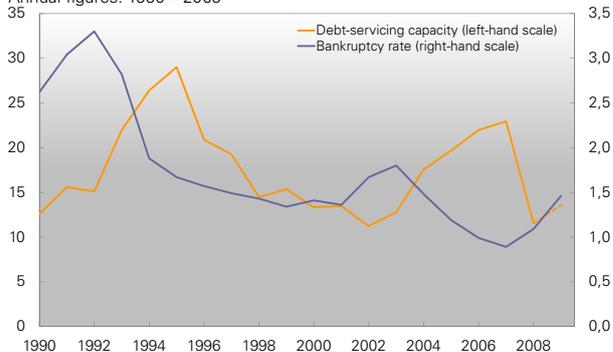
During 2009, enterprises issued shares and reduced their debt, which contributed to increasing equity capital ratios (see Chart D.9). Higher equity capital ratios reduce banks' potential losses from loan defaults. About 8% of the enterprises had negative equity capital in 2009. At end-2009, these enterprises accounted for 11% of enterprises' total bank debt. This debt is highly exposed to losses for banks.

So far in 2010 less share capital has been issued than in the corresponding period of 2009 (see Chart D.10). However, several of the issues in 2009 were crisis-related issues by companies with solvency problems.

### Moderate improvement in commercial property and shipping

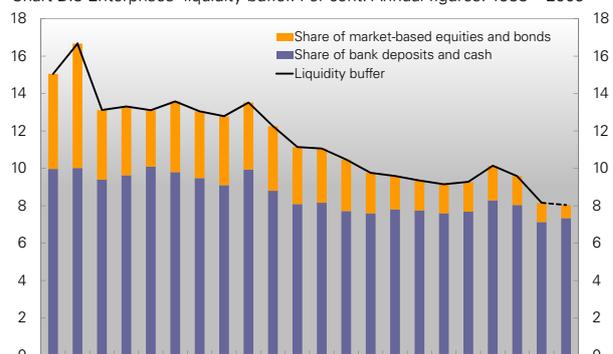
Norwegian banks have large loan exposures to commercial property and shipping (see Chart 16). The profitability of listed commercial property enterprises has deteriorated since the December report (see Chart D.11). Increased net financial costs and writedowns both contributed to the fall. The writedowns were due to lower commercial property prices. Since the peak in 2007, prices have fallen by 23% (see Chart 18). Turnover was very low in 2009 compared with the previous year, but picked up considerably during the second half of 2009. Operating income increased somewhat in 2009 Q4, which curbed the fall in profitability. Operating income is pri-

Chart D.7 Corporate debt-servicing capacity and bankruptcy rate. Per cent. Annual figures. 1990 – 2009<sup>1)</sup>



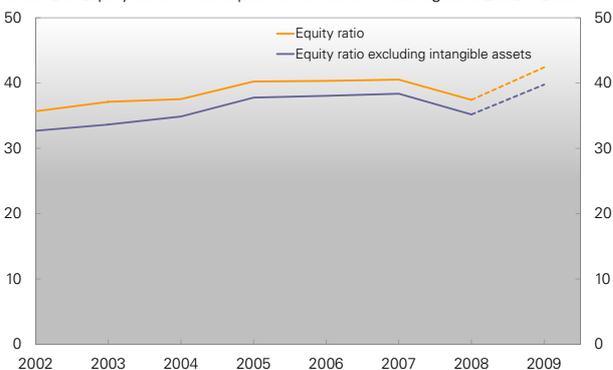
<sup>1)</sup> Debt-servicing capacity projected for 2009 based on an early sample in the SEBRA database. Public administration and oil and gas production not included. Sources: Statistics Norway and Norges Bank

Chart D.8 Enterprises' liquidity buffer. Per cent. Annual figures. 1988 – 2009<sup>1)</sup>



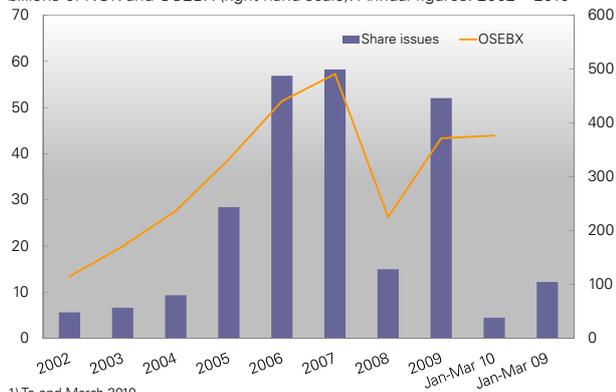
<sup>1)</sup> Figures for 2009 are projected based on an early sample in the SEBRA database. Public administration and oil and gas production not included. Source: Norges Bank

Chart D.9 Equity ratio for enterprises. Per cent. Annual figures. 2002 – 2009<sup>1)</sup>



<sup>1)</sup> Figures for 2009 are projected based on an early sample in the SEBRA database. Public administration and oil and gas production not included. Source: Norges Bank

Chart D.10 Share issues (left-hand scale) on Oslo Børs and Oslo Axxess in billions of NOK and OSEBX (right-hand scale). Annual figures. 2002 – 2010<sup>1)</sup>



<sup>1)</sup> To end-March 2010.  
Source: Oslo Børs

marily influenced by changes in rents when new contracts are signed or when old contracts are renegotiated. Rents for office premises flattened out at a relatively high level in 2009 (see Chart 18).

Office vacancy rates increased throughout 2009 and were 8.4% in 2010 Q1 according to DnB NOR Næringsmegling (see Chart D.12). The financial strength of commercial property companies has stabilised since the December report. The equity ratio for listed commercial property companies was 27% at end-2009. Commercial property enterprises reduced both their assets and debt in 2009 Q4.

Chart D.11 Key ratios for commercial property enterprises listed on Oslo Børs<sup>1)</sup>. Per cent. Quarterly figures. 2007 Q2 – 2009 Q4

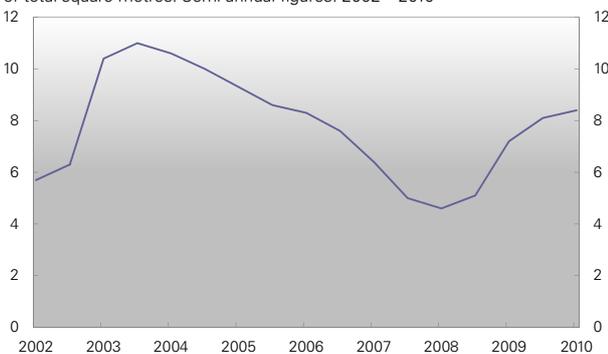


Source: Norges Bank

Earnings for listed shipping companies were low in 2009 Q4 (see Chart D.13). Both operating margins and return on equity were markedly lower than the average for the past eight years. Operating income fell and writedowns increased as a result of low freight and market prices (see Chart 17). A large proportion of long-term freight contracts restrained the fall in profitability. Many of these contracts expire in 2010 and 2011.

There is still considerable surplus capacity in the shipping industry. At the end of March 2010, orders for newbuildings were equivalent to 39% of the total existing fleet. Particularly delivery of new vessels, but also order cancellations, has reduced the order book since the December report (see Chart D.14). At the same time, demand for shipping has increased somewhat, partly as a result of increased demand from China. Demand for container shipping is still weak. Altogether 70% of demand in this segment comes from Europe and the US. The equity capital ratio for listed shipping companies has increased since the previous report and was 36% at the end of 2009. Debt repayment contributed to the increase. So far compulsory sales in the industry have been low.

Chart D.12 Vacancy rate<sup>1)</sup> office premises in Oslo, Asker and Bærum. Per cent of total square metres. Semi-annual figures. 2002 – 2010



<sup>1)</sup> DnB NOR's definition of office vacancy rate includes both direct lease and sublease, and areas that will be ready for new tenants within the next 12 months.  
Source: DnB NOR Næringsmegling

### Outlook ahead

Corporate profitability is expected to remain approximately at the current level during 2010, with a probable increase in corporate income as activity gradually picks up. However, there is increased uncertainty surrounding the outlook for the Norwegian economy owing to renewed financial market turbulence. Costs are also expected to increase somewhat, mainly as a result of higher funding

costs (see Chart D.15). New regulation (see page 11) may reduce demand for corporate bonds from banks and insurance companies in future. This may increase the premiums on corporate bonds and increase the cost of funding for enterprises.

If the turbulence in financial markets persists, it may be demanding for enterprises to raise capital in the market. However, enterprises are expected to repay debt and raise new equity capital in the time ahead. This will bolster enterprises' financial strength and improve their debt-servicing capacity. Strengthened debt-servicing capacity helps to reduce enterprises' probability of default. Credit risk on banks' corporate loans is thus expected to decline in the period to 2013.

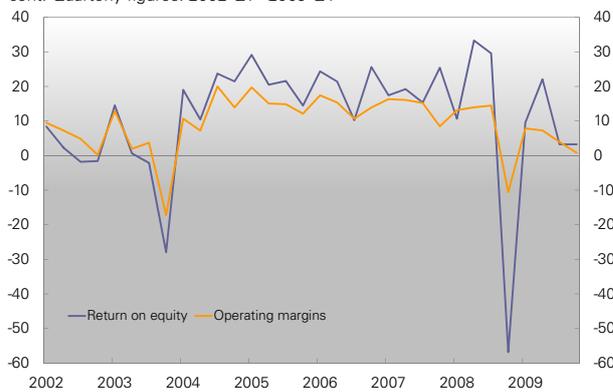
The outlook for commercial property has improved since the December report. Market participants expect rents and prices to stabilise at around the current level. A large share of commercial property debt matures in 2012. Banks' lending terms are tighter than prior to the financial crisis and the loan-to-value ratio of many properties has increased. This may make refinancing difficult and create a need for fresh equity capital in the companies. In shipping too, the outlook has improved somewhat since the December report. The order book for newbuildings is expected to shrink further and freight demand is expected to pick up. However, high and growing government debt will probably contribute to low economic growth in many advanced countries in the time ahead. This is particularly important for demand for container shipping. The outlook in the dry bulk segment has improved somewhat since the December report, but developments are highly dependent on activity in China.

## D.2 Households

### The debt burden remains high

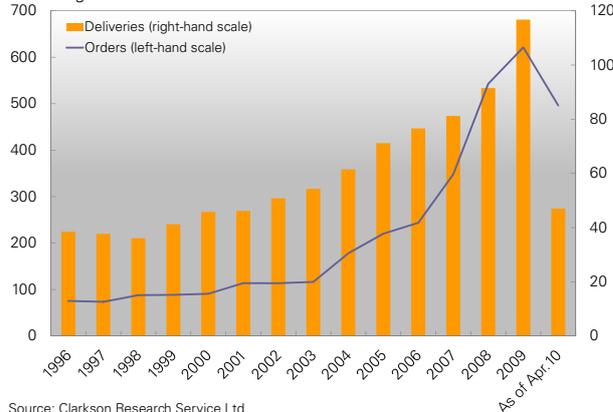
Following an extended period of strong growth in household debt, growth eased during the past year and stabilised at approximately the same level as growth in disposable income (see Chart D.16). The debt burden (debt as a percentage of disposable income) has never been as high

Chart D.13 Key ratios for shipping enterprises listed on Oslo Børs. Per cent. Quarterly figures. 2002 Q1– 2009 Q4



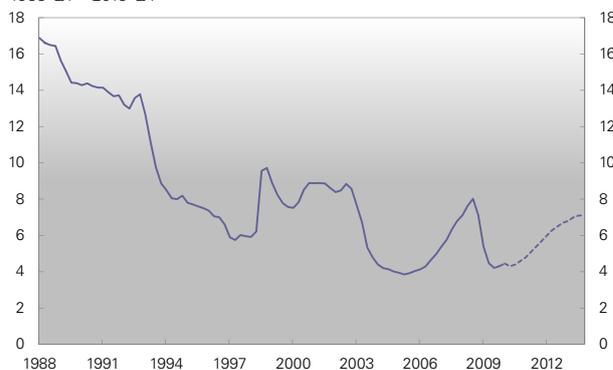
Source: Norges Bank

Chart D.14 Global orders and deliveries of new ships. In millions DWT. Annual figures. 1996 – 2010



Source: Clarkson Research Service Ltd

Chart D.15 Banks' lending rates to enterprises. Per cent. Quarterly figures. 1988 Q1 – 2013 Q4<sup>1)</sup>



1) Projections for 2010 – 2013.

Sources: Statistics Norway and Norges Bank

Chart D.16 Credit to households and disposable income. Per cent. Monthly figures.<sup>1)</sup> January 1998 – March 2010 and 1988 Q1 – 2009 Q4

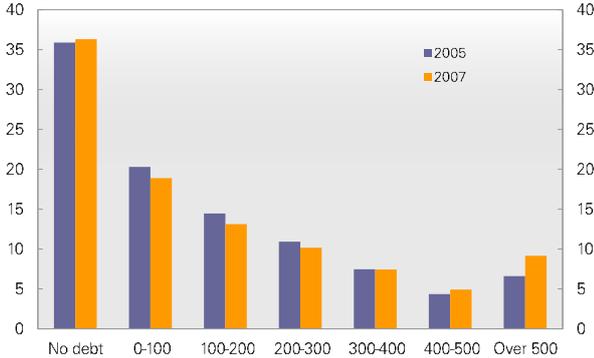


1) Quarterly figures for growth in disposable income. Disposable income is adjusted for reinvested dividend payments.  
2) Annual growth in disposable income is smoothed using a four-year moving average.  
Sources: Statistics Norway and Norges Bank

since statistics began (see Chart 7). The debt burden is also high compared with other countries (see Chart 19).

The debt burden is also high when adjusted for households' financial wealth. In 2007, more than 20% of households (about 340 000 households) had a net debt burden of over 300% (see Chart D.17). Many of the households receive transfers and guarantees from parents and other sources.

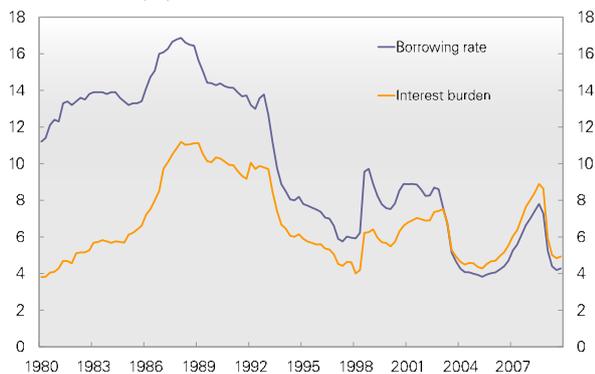
Chart D.17 Households by net debt burden.<sup>1)</sup> Per cent. Annual figures. 2005 and 2007



1) Net debt burden is debt minus gross financial assets as a percentage of disposable income.  
Sources: Statistics Norway and Norges Bank

Home equity lines of credit and partially interest-free loans with long repayment periods improve the borrower's liquidity at an early stage of the loan's maturity. This enables households to service higher debt with a given income and may have contributed to the increase in the debt burden. There was a sharp rise in outstanding home equity lines of credit during the period from 2006 to 2008, as an increasing number of banks offered such loans. Home equity lines of credit are normally only provided within 75% of the mortgage lending value. Growth in home equity lines of credit will probably stabilise as the market for such loans is saturated.

Chart D.18 Household borrowing rates and interest burden. Per cent. Quarterly figures. 1980 Q1 – 2009 Q4



Sources: Statistics Norway and Norges Bank

Developments in the debt burden will also be influenced by banks' credit standards. In March 2010, Finanstilsynet published guidelines for prudent residential mortgage lending.<sup>2</sup> The intention of these guidelines is to limit the volume of large loans in relation both to income and property value. The guidelines state that, if banks use debt-income ratio as the indicator, the loan should not normally exceed three times the gross income of the borrower. In 2008, 273,000 households had debt that was more than three times their gross income, an increase from approximately 230,000 households in 2007. According to the guidelines, the loan-to-value ratio should not exceed 90%. In 2007, approximately 160,000 households had loans amounting to 90% of the mortgage lending value or more. The guidelines will help to limit household debt burden and loan-to-value ratios in the housing market (see box on page 20).

### Unchanged debt-servicing capacity

Lending rates fell markedly during 2009. This considerably reduced the interest burden (see Chart D.18). A given

2 See "Retningslinjer for forsvarlig utlånspraksis for lån til boligformål" [Guidelines for Prudent Residential Mortgage Lending], Rundskriv 11/2010, Finanstilsynet (No English translation available).

interest rate level now results in a higher interest burden than earlier because the debt burden is higher. In 2007, approximately 200,000 households had an interest burden of more than 20%. The average lending rate was then just under 6%. If the rate had been 9%, approximately 680,000 households would have had such a high interest burden. Mortgage interest rates will increase ahead. This will result in higher interest burdens, which will weaken households' debt-servicing capacity.

The household saving ratio increased markedly in 2009, and at year-end was at its highest level since the end of the 1970s (see Chart D.19). The high level of saving is probably due to increased uncertainty concerning economic developments and has occurred through a steep rise in household net lending (see Chart D.20). At the same time, fixed investment has fallen.

The increase in net lending is mainly attributable to increased insurance claims and somewhat lower debt growth (see Chart D.21). Households also had relatively large gains on securities in 2009, so that their total net financial wealth increased somewhat. If income is not sufficient to service debt, households will for a period be able to draw on their financial wealth. The increase in financial wealth is mainly due to increased insurance claims, which households cannot draw on as needed. Increased saving has thus to a limited extent improved households' debt-servicing capacity. Excluding insurance reserves, households' net financial wealth is negative (see Chart D.22).

Household real disposable income (excluding share dividends) increased by 5½% in 2009. Almost half of this was due to lower interest rates. Growth in disposable income has enabled households to maintain the level of consumption of most goods and services despite the increase in the saving ratio. The negative effect of increased saving on enterprises' sales has therefore been limited.

### Overly optimistic interest rate expectations

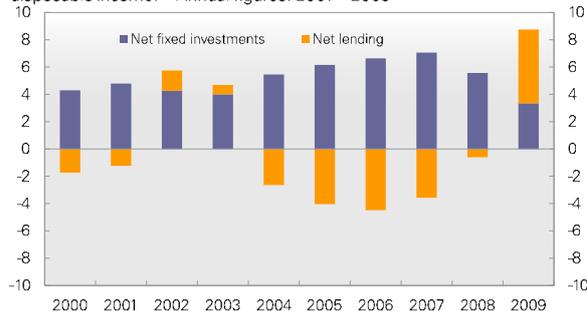
Approximately 85% of household borrowing comprises loans secured on dwellings. Purchase of a home is a long-term investment, and both the banks that provide loans and the individual households must take into consideration that interest rates may rise sharply. According to

Chart D.19 Household saving<sup>1)</sup>. Percentage of disposable income. Annual figures, 1980 – 2013<sup>2)</sup>



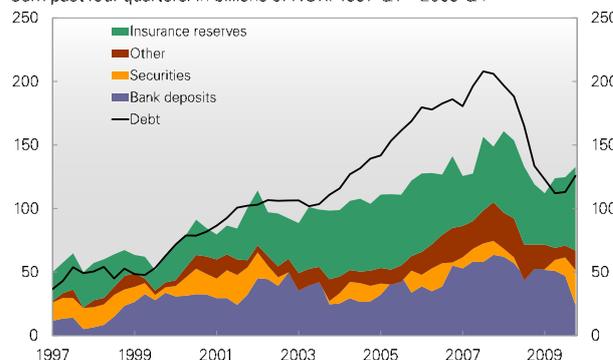
1) Adjusted for estimated reinvested dividend income for 2000-2005 and redemption/reduction of equity capital for 2006 – 2013.  
2) Projections for 2010 – 2013.  
Sources: Statistics Norway and Norges Bank

Chart D.20 Household net fixed investment and net lending. Percentage of disposable income.<sup>1)</sup> Annual figures, 2001 – 2009<sup>2)</sup>



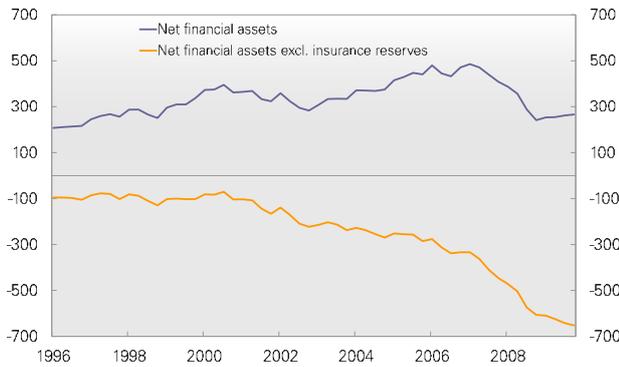
1) Capital transfers are deducted from net fixed investments. Disposable income and net lending are adjusted for estimated reinvested dividend payments for 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2008.  
2) Figures for 2009 and revisions for 2008 are based on provisional figures from the quarterly national accounts.  
Sources: Statistics Norway og Norges Bank

Chart D.21 Household gross debt and lending<sup>1)</sup> by investment instrument. Sum past four quarters. In billions of NOK. 1997 Q1 – 2009 Q4



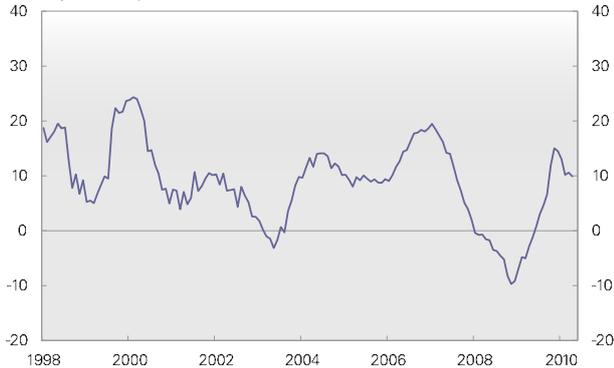
1) Excluding estimated reinvested dividend payments from 2001.  
Sources: Statistics Norway and Norges Bank

Chart D.22 Household net financial assets incl. and excl. insurance reserves. In billions of NOK. Quarterly figures. 1996 Q1 – 2009 Q4



Sources: Statistics Norway and Norges Bank

Chart D.23 House prices. 12-month change. Per cent. Monthly figures. January 1998 – April 2010



Sources: Association of Norwegian Real Estate agents, Association of Real Estate Agency Firms, Finn.no and Econ Pöyry

Chart D.24 House prices, land prices and building costs, deflated by CPI. Index. 1985 = 100. Annual figures. 1985 – 2009



1) Average price per square metre land < 20 decares. The series is based on Statistics Norway's transfer of properties index and includes unbuilt property for free market sale. The series is not adjusted for location or site development.  
Sources: Statistics Norway, Association of Norwegian Real Estate agents, Association of Real Estate Agency Firms, Finn.no, Econ Pöyry and Norges Bank

Finanstilsynet, some banks only make provisions for interest rates between 2 and 3 percentage points over the current level when assessing a customer's debt-servicing capacity<sup>3</sup>. This means that some banks only make provisions for mortgage interest rates of around 6% in periods where the interest rate is as low as it was in 2009.<sup>4</sup> This is approximately 2 percentage points lower than the level of mortgage interest rates in autumn 2008.

Approximately 10% of household loans are fixed-rate loans. Under 1% of household loans have a fixed-rate period of over 5 years. The proportion of fixed-rate loans is very low in Norway compared with other European countries.

### High house prices

House prices rose throughout 2009, and the 12-month rise was 9.9% in April 2010 (see Chart D.23). At the end of April, house prices (seasonally adjusted) were 15½% higher than at the trough in November 2008. Compared with other countries, house prices have risen steeply in Norway during the last decade (see Chart 8). Income growth in Norway has been higher than the mortgage interest rate after tax during this period (see Chart D.20). This has provided favourable conditions for borrowing and may have contributed to pushing up house prices.

In the long term, house prices will be determined by building costs. During the past 30 years, real house prices have increased considerably more than real building costs (see Chart D.24). Land costs are not included in the building costs measured. Real land costs have increased approximately as much as real house prices during the past 25 years (see Chart D.24).

There are several possible factors behind the steep rise in land prices. Expectations of higher land and house prices may in itself contribute to rising land prices. The shortage of building land in urban areas may also push up land prices for the country as a whole if households prefer to live centrally. In Norway, the level of house prices rises with increasing proximity to urban centres. Households' balance of considerations between residing in more expensive dwellings in urban centres or in cheaper dwellings outside urban centres depends on developments in travel

3 See "The Financial Market in Norway 2009: Risk Outlook", Finanstilsynet

4 The weighted mortgage interest rate was at its lowest in autumn 2009, at 3.2%.

costs. Travel costs consist both of direct transport costs and travelling time. Time spent travelling could alternatively be used for recreation (or gainful employment). Over time, real income growth will contribute to higher valuation of free time and thus higher travel costs. Households may wish to use part of their income growth on living closer to urban centres. This will result in increased real land prices in urban areas in the long term. The rise in house prices, and not only the level, will thus be higher in urban areas. On the basis of figures for the last ten years, there appears to be a correlation between proximity to urban areas and rise in house prices (see Chart D.25). Population growth in urban areas will also contribute to pushing up land costs.

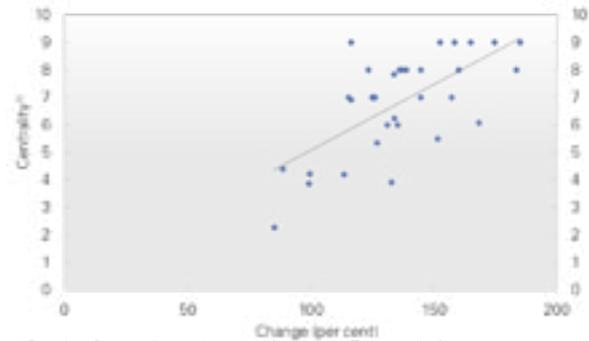
During the past 20 years, however, house prices have increased more than household income (see Chart D.26). This may also indicate that house prices are currently high in relation to a long-term equilibrium level. If Norwegian households have unrealistic expectations regarding future income growth and interest rates, developments in the Norwegian housing market will be fragile.

### The outlook ahead

The debt burden is projected to increase somewhat during the coming years, even though effective compliance with Finanstilsynet's guidelines for prudent mortgage lending will probably limit the rise in the debt burden somewhat. Higher mortgage interest rates will increase households' interest costs in the time ahead. On balance, the risk of bank losses in the short term on loans to households is assessed as almost unchanged since the December report.

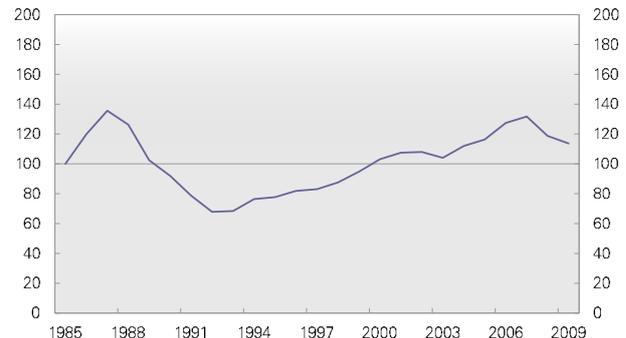
Current house prices are probably high in relation to a long-term equilibrium level. However, against the background of continued low mortgage interest rates, the prospect of stable unemployment and sound income growth ahead, house prices are expected to continue to rise in 2010, but at a slower pace than in 2009. It is very difficult to predict when and how a house price correction will take place. This may occur abruptly, for example as a result of major changes in household expectations, as described in our alternative stress scenario, or more gradually owing to a period of a slower rise in house prices than in incomes, as assumed in the baseline scenario (see Section E).

Chart D.25 House prices by centrality.<sup>1)</sup> Change from 1998 Q1 to 2009 Q4



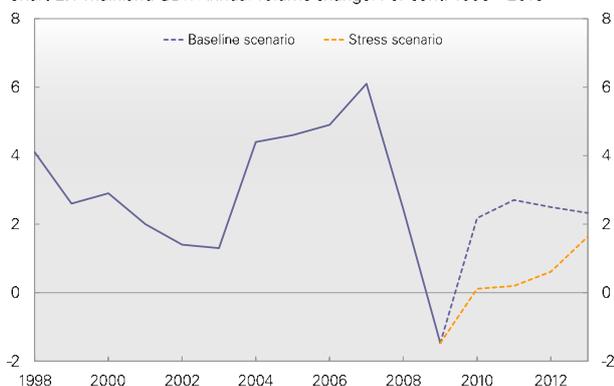
<sup>1)</sup> Based on Statistics Norway's standard for centrality. The centrality factor depends on travelling time to the nearest centre (defined as an area with central functions of high order such as post office, bank etc.), the number of such functions and population in this centre. Sources: Association of Norwegian Real Estate agents, Association of Real Estate Agency Firms, Finn.no, Econ Pöyry, Statistics Norway and Norges Bank

Chart D.26 House prices deflated by disposable income.<sup>1)</sup> Index. 1985 = 100. Annual figures. 1985 – 2009



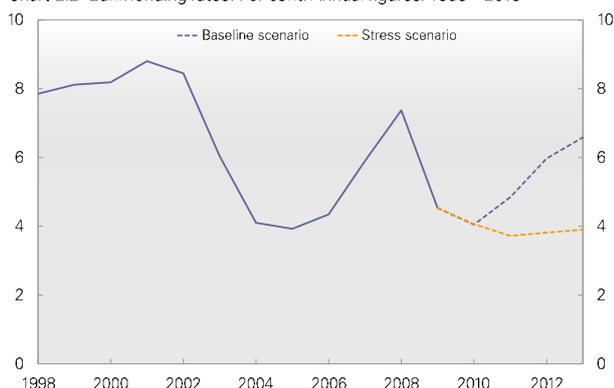
<sup>1)</sup> Disposable income is adjusted for estimated reinvested dividend payments 2000 – 2005 and redemption/reduction of equity 2006 – 2012. Sources: Association of Norwegian Real Estate agents, Association of Real Estate Agency Firms, Finn.no, Econ Pöyry, Statistics Norway and Norges Bank

Chart E.1 Mainland GDP. Annual volume change. Per cent. 1998 – 2013<sup>1)</sup>



1) Projections for 2010–2013.  
Sources: Statistics Norway and Norges Bank

Chart E.2 Bank lending rates. Per cent. Annual figures. 1998 – 2013<sup>1)</sup>



1) Projections for 2010–2013.  
Sources: Statistics Norway and Norges Bank

## E. Stress testing banks' capital adequacy

*In stress-testing banks' capital adequacy, Norwegian banks are exposed to a stress scenario where external growth remains low and household expectations in Norway weaken. Under this stress scenario, banks still manage to satisfy the capital requirements.*

### Weaker macroeconomic developments

In stress-testing banks' capital adequacy, a stress alternative based on our risk factors (see page 12) is applied where a number of unexpected economic shocks occur. In the stress alternative, mainland GDP is about 7% lower at the end of 2013 than in the baseline scenario.<sup>1</sup> The stress alternative chosen is about as sharp as in the previous report as the macroeconomic picture is not significantly different. The period analysed is from 2010 Q1 to end-2013.

The stress scenario is based on the following assumptions:

- A prolonged downturn with about zero growth among our trading partners. The growth profile is weak compared with that observed historically but is not unrealistic in the light of developments over the past two years and the high degree of uncertainty surrounding the present situation.
- The broad downturn in the world economy leads to a fall in oil prices to about USD 40 per barrel in 2010 and 2011. Oil prices subsequently rise gradually towards USD 50 in 2013.
- The Norwegian currency is perceived as a safe haven so that the real exchange rate remains around the level in the baseline scenario.
- In addition, financial market turbulence leads to an increase in premiums in international money markets

<sup>1</sup> The projections in this report are based on the projections in *Monetary Policy Report 1/2010*. The projections in *Financial Stability 2/2009* were based on the projections in *Monetary Policy Report 3/2009*.

to a little more than ½ percentage point. Already low central bank interest rates at home and abroad limit the leeway for countering the increase in money market rates.

- Household expectations weaken as a result of sluggish developments.

In the stress scenario the downturn in the international economy leads to reduced exports and manufacturing production in Norway. Lower oil prices also lead to a fall in investment. At the same time, higher unemployment and lower household income growth leads to increased saving and lower private consumption. This reduces growth in the Norwegian economy compared with the baseline scenario (see Chart E.1). In the stress scenario, average mainland GDP growth is somewhat stronger than average growth recorded during the 1988 – 1992 banking crisis.

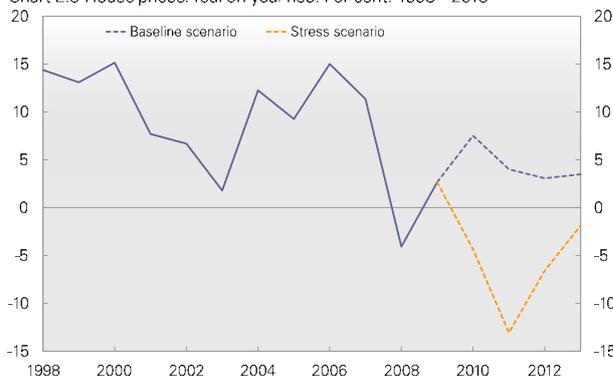
As a technical assumption, the interest rate is set using a Taylor-type rule, where inflation and the activity level determine the interest rate. Given higher money market premiums in the stress scenario, lending rates show little decline in relation to today’s level despite weaker economic growth (see Chart E.2).

A prolonged downturn in global economic activity, which leads to lower income growth and higher unemployment in Norway, weakens household expectations. House prices and household credit growth move downwards (see Charts E.3 and E.4). Nominal house prices are a little less than 30% lower than today’s level in 2013. Falling house prices have feedback effects on the Norwegian economy through lower consumption and weaker business activity, for example in the residential construction industry. Corporate investment declines, and corporate debt growth is negative in 2010 and 2011 in the stress scenario.

### Banks’ loan customers weaken

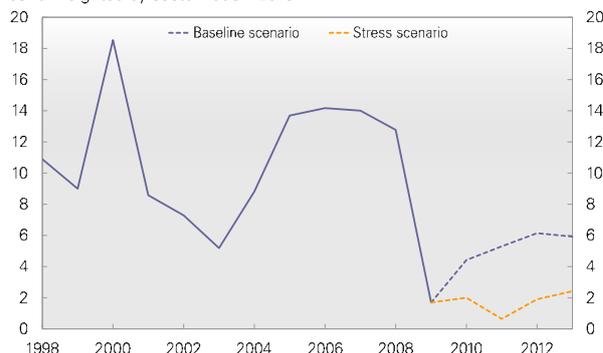
The debt-servicing capacity of banks’ loan customers weakens in the stress scenario. In particular, corporate problem loans increase to more than 9% of gross loans in 2012. Banks’ potential loan losses are highest for commercial property, shipping and manufacturing. Loans to these industries accounted for over half of banks’ total

Chart E.3 House prices. Year-on-year rise. Per cent. 1998 – 2013<sup>1)</sup>



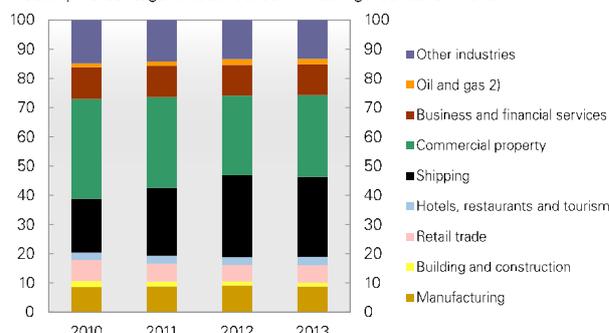
1) Projections for 2010–2013.  
Sources: Association of Norwegian Real Estate Agents, ECON Pöryr, Finn.no, Association of Real Estate Agency Firms and Norges Bank

Chart E.4 Credit to households and enterprises. Year-on-year growth<sup>1)</sup>. Per cent. Weighted by sector. 1998 – 2013<sup>2)</sup>



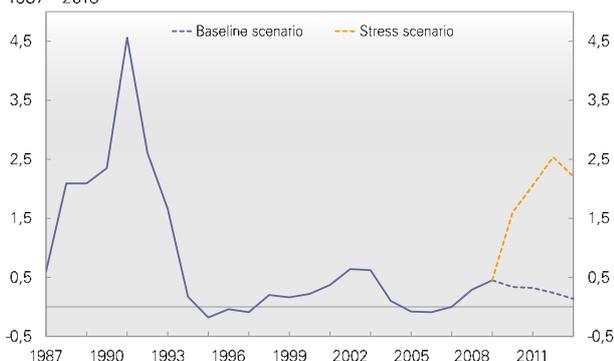
1) Change in stock measured at yearend.  
2) Projections for 2010–2013.  
Sources: Statistics Norway and Norges Bank

Chart E.5 Expected losses on corporate loans<sup>1)</sup> in stress scenario. By industry. Percentage of total losses. Annual figures. 2010 – 2013



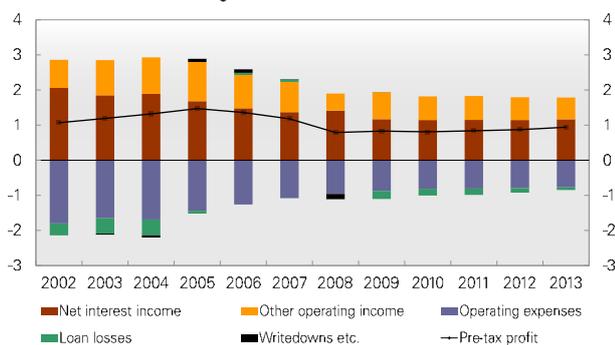
1) Calculated by risk-weighted debt, defined as probability of default multiplied by bank debt.  
2) Including oil services.  
Source: Norges Bank

Chart E.6 Banks' loan losses. Percentage of gross lending. Annual figures. 1987 – 2013<sup>1)</sup>



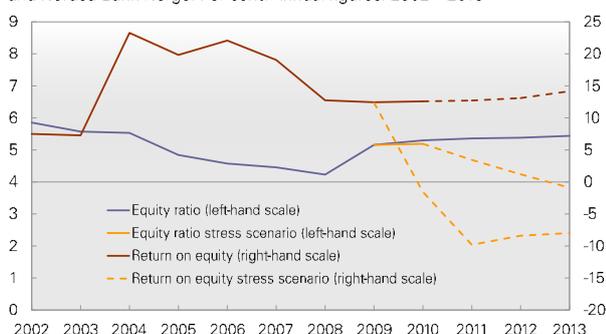
1) Projections for 2010 – 2013 for DnB Nor Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank1 SMN and SpareBank 1 Nord-Norge. Source: Norges Bank

Chart E.7 Banks' pre-tax profits as a percentage of average total assets. Baseline scenario. Annual figures. 2002 – 2013<sup>2)</sup>



1) All banks excluding branches of foreign banks in Norway. 2) Projections for 2010 – 2013 for DnB Nor Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank1 SMN and SpareBank 1 Nord-Norge. Source: Norges Bank

Chart E.8 Equity ratio and return on equity for Norway's five largest banks<sup>1)</sup> and Nordea Bank Norge. Per cent. Annual figures. 2002 – 2013<sup>2)</sup>



1) DnB NOR Bank, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge. 2) Projections for 2010 – 2013. Source: Norges Bank

lending to enterprises at end-2009. Commercial property accounts for the largest share of total expected losses in the stress scenario (see Chart E.5). The shipping industry's share of total expected losses increases most in relation to today's level.

Property prices fall in the stress scenario. The loan-loss ratio, losses as a percentage of problem loans, is assumed to be 40% during the entire period. This is somewhat lower than the highest levels recorded during the 1988 – 1993 banking crisis. Losses will then account for 2½% of gross loans in 2012 (see Chart E.6). In a more severe stress scenario with extra high losses on loans to the shipping industry and the Baltic countries, losses rise further to close to 3% of gross loans. Losses on loans to households are low, peaking at ½%, while losses on loans to enterprises are about 3–4%.

### Banks' capital adequacy remains above the minimum requirement

In the baseline scenario, lower losses and somewhat higher net interest income than in 2009 result in an improvement in bank profits (see Chart E.7). Return on equity is expected to be lower ahead than in the period prior to 2008 when banks had access to cheap funding and posted solid earnings due to high economic growth (see Chart E.8). There is, however, increased uncertainty surrounding the outlook, as high government debt in many countries has led to fresh turbulence in financial markets.

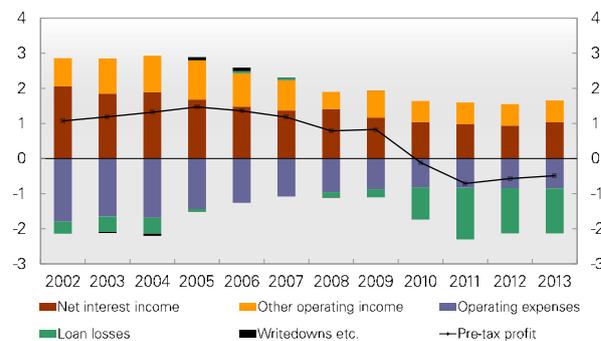
In the baseline scenario, it is assumed that the premium on banks' market funding remains flat through 2010 and 2011 and that overall banks hold interest margins constant during this period. There is increased uncertainty surrounding these projections following renewed turbulence in financial markets. The introduction of new capital and liquidity requirements in 2012 will compel banks to increase their long-term funding and hold larger liquidity buffers (see Section C). Net interest income may come under pressure when banks adapt to the new requirements. The increase in long-term funding, which is more costly than short-term funding, is expected to occur gradually through the period. The increase in long-term funding increases the premium on banks' market funding gradually

in the period up to 2013. However, bank risk will be lower once the banks have adapted to the new requirements. In the longer term, this may reduce the premium banks pay on their funding. Banks are assumed to pass on half of the increase in funding costs to loan customers through an increase in banks' lending margins. New guidelines for residential mortgages will also limit banks' lending growth and earnings ahead. The new regulation will under the assumptions in this report weaken banks' return on equity by more than 1 percentage point in 2013.

In the stress scenario, bank results are negative as from 2010, primarily owing to an increase in loan losses (see Chart E.9). Losses at the six banks in the stress test are higher than for banks and mortgage companies combined as their share of loans to vulnerable sectors is higher. Risk among borrowers leads to downgrading of banks. The risk premiums on banks' market funding increase and are 0.4 percentage point higher than today's level. The effects of the new regulation are the same in the stress scenario and the baseline scenario. It is assumed that banks' market income corresponds to the average of the four years of lowest performance since 2004.

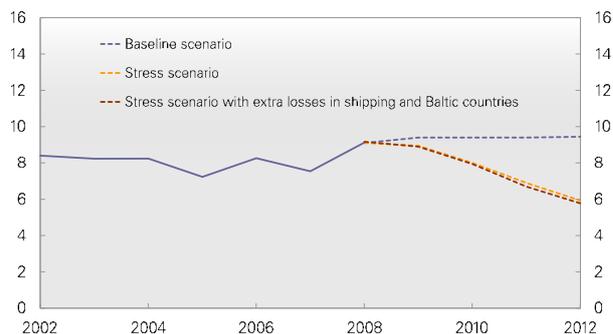
The average core capital ratio is between 9% and 10% in the baseline scenario (see Chart E.10). In the stress scenario, negative results lead to markedly lower capital adequacy ratios, with core capital at less than 6% in 2013. This is well above the statutory requirement of 4%, but this requirement may increase by the end of 2012 (see Section C). In the more severe stress scenario with extra high losses on loans to the shipping sector and the Baltic countries, core capital ratios are somewhat lower than this.

Chart E.9 Banks<sup>1)</sup> pre-tax profits as a percentage of average total assets. Stress scenario. Annual figures. 2002 – 2013<sup>2)</sup>



1) All banks excluding branches of foreign banks in Norway.  
 2) Projections for 2010 – 2013 for DnB Nor Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank1 SMN and SpareBank 1 Nord-Norge.  
 Source: Norges Bank

Chart E.10 Tier 1 ratio for Norway's five largest banks<sup>1)</sup> and Nordea Bank Norge. Per cent. Annual figures. 2002 – 2013<sup>2)</sup>



1) DnB NOR Bank, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge.  
 2) Projections for 2010 – 2013.  
 Source: Norges Bank

## Projections of banks' capital adequacy – changes since *Financial Stability 1/09*

Capital adequacy at the largest Norwegian banks have been considerably higher than envisaged in the May 2009 report (see Chart 1), both due to higher-than-projected earnings and new core capital issues. Higher-than-projected earnings primarily reflect lower-than-expected losses (see Chart 2). Higher dividend income and securities and foreign exchange gains also made a greater contribution than anticipated.

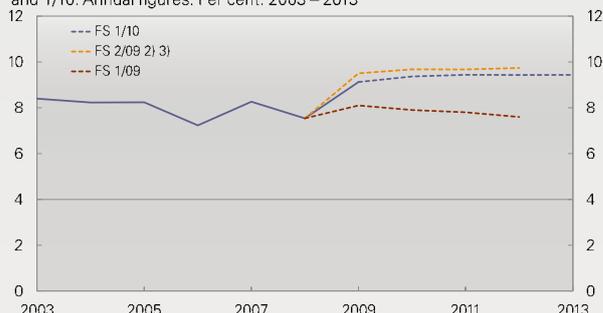
In spring 2009, the economic situation was shrouded in uncertainty. The turnaround in the Norwegian economy occurred in the 2009 Q2, but this did not become clear until well into autumn. In spring, it was still assumed that the bankruptcy rate would continue to rise and that collateral values would continue to decline. As activity has gained momentum and uncertainty has subsided, our loss projections have been revised down.

So far in this downturn, bank losses have been lower than in the two previous downturns. This is partly because equity ratios in the enterprise sector were high in 2007. High oil prices and lower unemployment than in the previous downturn may also have contributed to better solvency among households and enterprises.

The projections made in the previous report, *Financial Stability 2/09*, were relatively accurate for 2009 Q4. The difference is primarily due to higher-than-expected tax payments.

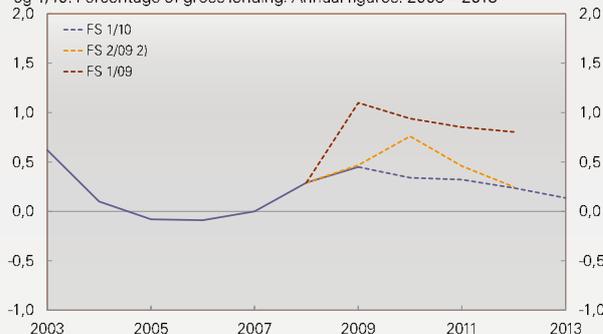
In the period ahead, bank earnings are expected to be somewhat lower than projected in the previous report, measured as a percentage of average total assets (see Chart 1), primarily reflecting lower growth in net interest income. In the previous report, higher credit risk was assumed to lead to increased lending margins. Since the previous report, competition for loan customers has intensified somewhat. Bank credit risk appears to be somewhat lower, which is likely to keep interest margins at a low level ahead. Moreover, the European Commission has presented proposals for tighter regulation of bank capital and liquidity management. More long-term funding, which is normally more expensive than short-term funding, and low returns on liquid assets, may put pressure on net interest income when banks adapt to the new requirements. But bank risk will be lower once the banks have adapted to the new requirements. This may reduce price premiums on banks' funding in the slightly longer term.

Chart 1 Banks' Tier 1 ratio. Baseline scenarios in *Financial Stability 1/09, 2/09* and *1/10*. Annual figures. Per cent. 2003 – 2013<sup>1)</sup>



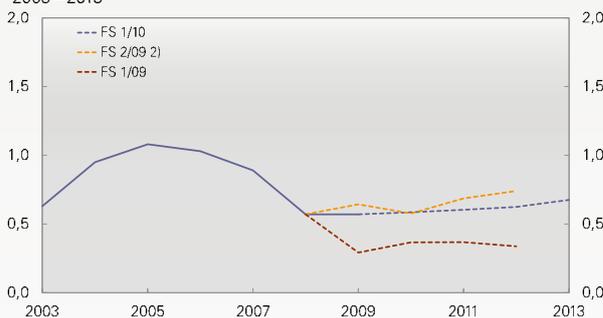
1) DnB NOR Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge.  
2) Projections include planned capital raising in 2009 Q4.  
3) Projections do not include losses to the Baltic countries.  
Sources: Statistics Norway and Norges Bank

Chart 2 Bank's loan losses. Baseline scenarios in *Financial Stability 1/09, 2/09* og *1/10*. Percentage of gross lending. Annual figures. 2003 – 2013<sup>1)</sup>



1) Alle banks in Norway. Projections for 2009–2013 for DnB NOR Bank, Nordea Bank Norge SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge.  
2) Projections do not include losses to the Baltic countries.  
Sources: Statistics Norway and Norges Bank

Chart 3 Banks' post-tax profits as a percentage of average total assets. Baseline scenarios in *Financial Stability 1/09, 2/09* og *1/10*. Annual figures. 2003 – 2013<sup>1)</sup>



1) Projections 2009 – 2013 for DnB NOR Bank, Nordea Bank Norge, SpareBank 1 SR-Bank, Sparebanken Vest, SpareBank 1 SMN and SpareBank 1 Nord-Norge.  
2) Projections do not include losses to the Baltic countries.  
Sources: Statistics Norway and Norges Bank

# Annex 1

## Glossary

**Buffer capital:** A measure of life insurance companies' solvency. Buffer capital is defined as the sum of the securities adjustment reserve, supplementary provisions with an upward limit of one year and surplus Tier 1 capital.

**Swap arrangement:** Arrangement whereby banks acquire government securities in exchange for covered bonds (OMF) for an agreed period. Norges Bank administers the arrangement on behalf of the Ministry of Finance.

**Disposable income:** Household disposable income is defined as: all forms of income less taxes, interest expenses and other expenses. (Other expenses comprise a number of components such as transfers abroad, payments to group pension schemes etc.)

**Financial instruments:** The Securities Trading Act defines financial instruments as: transferable securities (including equities and bonds), units in securities funds, money market instruments and derivatives.

**Financial institution:** Financial institution is a collective term for banks, finance companies and insurance companies.

**Debt burden:** Household debt burden is defined as: loan debt as a percentage of disposable income adjusted for estimated reinvested dividends.

**Debt-servicing capacity:** An enterprise's debt-servicing capacity is defined as: pre-tax profits and writedowns and depreciation as a percentage of bank and bond debt. Intra-group financing is not included.

**Deposit margin:** The difference between the 3-month effective NIBOR rate and the average deposit rate on the last trading day in the quarter.

**NIBOR (Norwegian Inter Bank Offered Rate):** NIBOR or the money market rate is the interest rate on interbank loans. Supply and demand in the money market determine money market rates. NIBOR is a currency swap rate.

**Corporate market:** Sectors 710 – 790, which include non-financial private enterprises and the self-employed.

**Covered bonds (OMF):** Debt instruments secured by a cover pool to which investors have a preferential claim in the event of default. The cover pool can include residential mortgages, commercial property loans and public sector debt.

**OBX Index:** A stock market index which lists the 25 most liquid companies on the main index of the Oslo Stock Exchange in Norway. The list is revised every six months.

**Covered bond mortgage company:** Mortgage company entitled to issue covered bonds.

**Retail market:** Sector 810, which comprises wage earners, pensioners, benefit recipients, students etc.

**Problem loans:** Non-performing loans and other loans recognised on banks' balance sheets as high-risk loans.

**Private and municipal sector:** Sectors 510 – 890, which include the institutional sectors local government, public non-financial enterprises, private non-financial enterprises and households.

**Interest burden:** Household interest expenses after tax as a percentage of disposable income adjusted for estimated reinvested dividends plus interest expenses.

**Risk-weighted debt:** Used in connection with the SEBRA model. Risk-weighted debt for an enterprise is calculated as the enterprise's default probability multiplied by its bank debt.

**SEBRA model:** SEBRA stands for System for Edb-Basert RegnskapsAnalyse (system for computer-based analysis of annual accounts figures). Norges Bank uses the SEBRA model to calculate historical and future bankruptcy probabilities in the enterprise sector.

**Lending margin:** Difference between the average lending rate and the 3-month effective NIBOR rate on the last trading day in the quarter.

# Annex 2

## Boxes 2005 – 2010

### 1/2010

Macroprudential supervision and systemic risk  
Finanstilsynet's new guidelines for prudent lending – effects on household debt  
Consequences of Solvency II for banks  
New accounting rules for valuation of financial assets

### 2/2009

Measures under discussion aimed at improving financial regulation  
Capital requirements during the banking crisis in the early 1990s  
Difficulties in comparing banks' capital adequacy  
In favour of wider use of central counterparties  
Payment systems have functioned effectively  
Shipping – a vulnerable sector

### 1/2009

The background for the financial crisis  
Then and now – a comparison with the banking crisis of 1988–1993

### 2/2008

Banks' capital requirements  
How vulnerable is the financial system? An analysis using gap indicators  
Stress-testing of bank losses and results

### 1/2008

Stress-testing of bank losses and results  
Norges Bank's Survey of Bank Lending  
Central bank measures to address liquidity problems at banks

### 2/2007

Problems in the US residential mortgage market  
Problems in interbank markets – central bank liquidity measures  
Covered bonds  
Stress testing of banks' losses and results

### 1/2007

International experience of turnarounds in the housing market  
Low share of fixed-rate loans in the household sector  
Low household saving  
An analysis of banks' problem loans

### 2/2006

Substantial losses in Amaranth hedge fund  
Housing investment and house prices  
Higher debt in households in many countries  
A fall in household consumption – what is the impact on credit risk in the corporate sector?  
Basel II – what is the impact on banks' capital adequacy?

### 1/2006

Implications of changes in pension fund regulations for the bond market  
Long-term real interest rates and house prices  
Household housing wealth and financial assets  
Household margins  
Banks' pricing of corporate credit risk  
The importance of Norges Bank's key rate and the competitive climate for banks' interest rates  
Equity market valuation

### 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

## Annex 3

Table 1 Structure of the Norwegian financial industry as of 31 December 2009

	Number	Lending (NOK bn)	Total assets (NOK bn)	Tier 1 capital ratio (%)	Capital ratio (%)
Banks (excluding branches of foreign banks)	137	1 681	3 132	10,5	13,0
Branches of foreign banks	11	322	566		
Mortgage companies (including branches of foreign companies)	30	796	1 124	11,8	13,6
Finance companies (including branches of foreign companies)	51	125	145	12,6	13,9
State lending institutions	3	221	235		
Life insurance companies (excluding branches of foreign companies)	12	41	791	12,5	15,4
Non-life insurance companies (excluding branches of foreign companies)	46	1	122	43,3	43,8
Memorandum:			(NOK bn)		
Market value of equities, Oslo Børs			1 514		
Outstanding domestic bonds and certificates			1 568		
Issued by public sector and state-owned companies			632		
Issued by banks			353		
Issued by other financial institutions			322		
Issued by other private enterprises			106		
Issued by non-residents			156		
GDP Norway, 2009			2 408		
GDP mainland Norway, 2009			1 854		

Sources: Finanstilsynet (Financial Supervisory Authority of Norway), Oslo Børs, Statistics Norway and Norges Bank

**Table 2** Market shares of banks and covered bond mortgage companies<sup>1)</sup> in Norway as of 31 December 2009. Per cent

	Gross lending to		Deposits from	
	Retail market	Corporate market	Retail market	Corporate market
DnB NOR Bank <sup>2)</sup>	31.5	31.3	32.4	36.5
Subsidiaries of foreign banks in Norway <sup>3)</sup>	12.7	18.9	9.1	19.2
Branches of foreign banks in Norway <sup>4)</sup>	11.1	19.0	7.8	13.3
SpareBank 1-alliansen <sup>5)</sup>	19.0	15.1	19.2	13.8
Terra-Gruppen <sup>6)</sup>	8.9	4.0	11.2	5.4
Other savings banks <sup>7)</sup>	13.5	9.7	15.6	9.9
Other commercial banks <sup>8)</sup>	3.2	2.0	4.8	1.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Total market (NOK bn)</b>	<b>1 513</b>	<b>1 011</b>	<b>674</b>	<b>569</b>

1) The market shares are calculated by summing the balance sheet items for the institutions in the different groups.

2) DnB NOR Bank, Nordlandsbanken, DnB NOR Boligkreditt and DnB NOR Næringskreditt

3) Nordea Bank Norge, Santander Consumer Bank, SEB Privatbanken and Nordea Eiendomskreditt

4) Fokus Bank filial av Danske Bank, Handelsbanken, SEB, Swedbank, Handelsbanken Eiendomskreditt, BNP Paribas, Skandiabanken + 5 other branches

5) SpareBank 1 SR-Bank, SpareBank 1 SMN, SpareBank 1 Nord-Norge, Sparebanken Hedmark + the 16 other savings banks in SpareBank 1-alliansen, SpareBank 1 Boligkreditt, BN Bank, Bank 1 Oslo, SpareBank 1 Næringskreditt and BN Boligkreditt

6) Terra BoligKreditt, Terra Kortbank and the 78 savings banks which are owners of Terra-Gruppen AS

7) Sparebanken Vest, Sparebanken Møre, Sparebanken Sør, Sparebanken Pluss, Sandnes Sparebank, Sparebanken Sogn og Fjordane + 14 other savings banks and 10 residential mortgage companies

8) Storebrand Bank, Landkreditt Bank, Storebrand Kredittforetak, Gjensidige Bank + 8 other commercial banks, 1 other residential mortgage company and 1 commercial mortgage company

Source: Norges Bank

## Table 3 Results in selected Norwegian banks in 2010 Q1<sup>1)</sup>

	DnB NOR Bank	Nordea Bank Norge	SpareBank 1 SR-Bank	Sparebanken Vest	SpareBank 1 Nord-Norge
	NOK millions	NOK millions	NOK millions	NOK millions	NOK millions
Net interest income	5 561	2 027	437	372	272
Net commission income	980	458	187	73	120
Net gains on financial instruments	1 298	121	30	14	26
Other operating income	583	4	122	13	51
Total income	8 422	2 610	776	472	469
Operating expenses	3 740	1 262	312	250	188
Operating profit before losses	4 682	1 348	464	222	281
Net gains on fixed and intangible assets	11	0	0	0	0
Losses on loans and guarantees	947	323	69	16	21
Pre-tax profit	3 746	1 025	395	206	260

1) Income statement for banks that had published as of 5 May (Figures for bank groups)

Sources: Banks' published quarterly reports

## Table 4 Results and capital adequacy in Norwegian banks for selected quarters<sup>1)</sup>

	08 Q4		09 Q1		09 Q2		09 Q3		09 Q4	
	NOK bn	% ATA								
Net interest income	11.91	1.60	10.11	1.32	10.27	1.33	10.47	1.34	10.17	1.30
Other operating income	1.55	0.21	5.59	0.73	6.79	0.88	5.62	0.72	5.40	0.69
Commission income	2.24	0.30	2.13	0.28	2.27	0.29	2.55	0.33	2.52	0.32
Securities, FX and derivatives	-0.97	-0.13	3.90	0.51	4.12	0.53	2.21	0.28	2.47	0.32
Other operating expenses	7.78	1.05	7.76	1.02	7.51	0.97	7.47	0.96	7.95	1.02
Personnel expenses	4.35	0.59	4.52	0.59	4.27	0.55	4.38	0.56	4.54	0.58
Operating result before losses	5.68	0.77	7.93	1.04	9.55	1.24	8.61	1.10	7.62	0.98
Losses on loans and guarantees	3.83	0.52	2.15	0.28	1.69	0.22	2.31	0.30	1.14	0.15
Pre-tax profit	1.36	0.18	5.78	0.76	7.53	0.98	6.71	0.86	4.79	0.61
After-tax profit	0.59	0.08	3.95	0.52	5.47	0.71	4.79	0.61	3.40	0.44
Capital ratio (%)	11.2		11.6		11.9		12.1		13.0	
Tier 1 capital ratio (%)	8.6		9.0		9.2		9.5		10.5	

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

Source: Norges Bank

## Table 5 Results and capital adequacy in Norwegian banks<sup>1)</sup>

	2005		2006		2007		2008		2009	
	NOK bn	% ATA								
Net interest income	31.75	1.78	34.51	1.62	36.72	1.50	43.16	1.55	41.01	1.32
Other operating income	17.64	0.99	18.11	0.85	18.47	0.75	10.69	0.38	23.39	0.76
Commission income	9.74	0.55	10.39	0.49	10.24	0.42	9.34	0.34	9.46	0.31
Securities, FX and derivatives	6.66	0.37	6.44	0.30	3.58	0.14	-1.42	-0.05	12.70	0.40
Other operating expenses	26.49	1.49	28.21	1.32	28.17	1.15	29.57	1.06	30.70	0.99
Personnel expenses	14.24	0.80	15.52	0.73	15.61	0.64	16.72	0.60	17.71	0.57
Operating result before losses	22.90	1.29	24.40	1.14	27.02	1.10	24.28	0.87	33.72	1.09
Losses on loans and guarantees	-1.08	-0.06	-1.45	-0.07	-0.01	0.00	5.41	0.19	7.29	0.24
Pre-tax profit	24.62	1.38	27.14	1.27	27.42	1.12	18.28	0.66	24.81	0.80
After-tax profit	18.54	1.04	20.64	0.97	20.78	0.85	13.02	0.47	17.61	0.57
Capital ratio (%)	11.9		11.2		11.7		11.2		13.0	
Tier 1 capital ratio (%)	9.6		8.7		9.3		8.6		10.5	

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

Sources: Norges Bank

**Table 6** Banks' losses on loans to various industries and sectors as a percentage of lending to the respective industries and sectors<sup>1)</sup>

Industry <sup>2)</sup> / sector	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Loans NOK bn 2009
Agriculture, forestry and fishing	0.26	0.21	2.73	6.06	1.46	-2.07	-0.52	-0.06	0.19	0.22	69.5
Fish-farming, hatcheries	0.12	0.16	8.05	22.37	3.90	-11.40	-0.15	-0.10	0.56	0.79	11.4
Extraction of crude oil and natural gas	0.40	0.08	1.84	1.83	-1.12	-0.03	-0.04	0.00	0.00	0.13	10.0
Manufacturing and mining	0.60	0.97	1.65	1.68	0.53	0.78	-0.25	0.09	0.45	0.84	59.1
Manufacturing										0.87	45.2
ship- and boatbuilding										0.84	12.1
Electricity and water supply, construction	0.69	0.21	0.46	1.66	0.50	0.29	-0.16	0.11	0.42	0.62	81.6
Construction	1.13	0.42	0.50	2.33	0.56	0.26	-0.13	0.18	0.66	1.23	22.8
Trade, hotels and restaurants	0.61	0.80	0.90	0.95	0.43	0.19	0.09	0.19	0.52	1.41	59.4
Trade and auto repair	0.60	1.05	0.64	0.76	0.27	0.14	0.08	-0.02	1.49	1.62	48.8
Hotels and restaurants	0.50	0.74	0.55	1.06	0.85	0.22	0.03	0.32	0.42	0.41	10.6
Shipping and pipeline transport	0.76	1.43	0.76	0.64	-0.04	0.06	0.06	-0.05	0.09	1.47	59.1
Other transport and communications	0.37	1.13	1.23	0.71	0.52	0.05	0.05	0.06	0.06	1.47	32.1
Commercial services and property management	0.08	0.37	1.51	0.56	0.04	-0.12	-0.04	0.02	0.34	0.34	405.0
Property management	0.02	0.12	0.68	0.22	0.08	0.02	-0.12	0.02	0.28	0.31	321.9
Commercial services										0.45	83.1
Other service industries	0.81	0.54	1.22	1.57	0.34	0.28	0.15	0.09	0.22	0.40	22.6
Total for all industries	0.41	0.61	1.44	1.50	0.34	-0.12	-0.07	0.03	0.28	0.60	798.4
Retail market	0.00	0.06	0.12	0.06	0.05	0.03	0.00	0.04	0.07	0.12	852.4
Others <sup>3)</sup>	0.21	0.30	0.26	0.16	0.25	-0.14	0.03	0.01	0.09	0.08	463.6
Total	0.19	0.31	0.63	0.57	0.16	-0.04	-0.03	0.03	0.17	0.29	2 114.4

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

2) Some industries have partly changed content due to the implementation of new statistical classifications of industry in May 2009

3) Financial institutions, central government and social security administration, municipal sector and foreign sector

Source: Norges Bank

**Table 7** Rating by Moody's<sup>1)</sup>, total assets, capital adequacy<sup>2)</sup> and return on equity for Nordic financial conglomerates, subsidiaries in Norway and Norwegian banks as of 2009 Q4. Consolidated figures.

	Financial strength	Short-term	Long-term	Total assets (NOK bn)	Tier 1 capital ratio (%)	Capital ratio (%)	Return on equity		
							2007	2008	2009
Nordea Bank	C+	P-1	Aa2	4 220	10.2	11.9	19.7	15.3	11.3
Danske Bank	C	P-1	Aa3	3 462	11.2	14.1	15.1	1.0	1.7
SEB	C-	P-1	A1	1 869	12.8	13.5	19.3	13.1	1.2
DnB NOR	C	P-1	Aa3	1 823	9.3	12.1	22.0	12.4	10.6
Handelsbanken	C+	P-1	Aa2	1 719	9.1	12.9	23.3	16.2	12.6
Swedbank	D+	P-1	A2	1 454	10.4	13.5	18.9	15.2	-12.5
Nordea Bank Norge	C	P-1	Aa2	534	8.1	10.5	13.2	17.6	10.1
SpareBank 1 SR-Bank	C-	P-1	A1	125	9.6	11.9	19.4	8.0	17.5
Sparebanken Vest	C-	P-1	A2	98	10.5	11.8	16.2	4.9	8.0
SpareBank 1 SMN	C-	P-1	A1	85	10.5	13.6	18.9	11.9	16.2
SpareBank 1 Nord-Norge	C	P-1	A1	64	11.9	14.3	18.1	8.1	18.2

1) Rating as of 19 April 2010. 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) Varying national regulations, including regulations for consolidation of life insurance companies, imply that Norwegian financial conglomerates' capital adequacy ratios are not directly comparable with ratios of other Nordic financial conglomerates.

Sources: Banks' websites and Moody's

**Table 8** Balance sheet structure, Norwegian banks.<sup>1)</sup>  
 Percentage distribution

	2008	2009	Q3 09
Cash and deposits	11.6	9.9	9.2
Securities (current assets)	11.6	19.3	19.1
Gross lending to households, municipalities and non-financial enterprises	59.4	53.7	54.4
Other lending	11.3	10.0	9.8
Loan loss provisions	-0.3	-0.4	-0.4
Fixed assets and other assets	6.4	7.5	8.0
<b>Total assets</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Customer deposits	43.4	43.1	42.3
Deposits/loans from domestic credit institutions	2.9	3.1	3.3
Deposits/loans from foreign credit institutions	12.9	15.2	14.3
Deposits/loans from Norges Bank	1.8	1.6	1.4
Other deposits/loans	1.2	6.3	6.2
Notes and short-term paper debt	5.4	3.1	3.2
Bond debt	19.0	15.5	16.4
Other liabilities	5.5	3.9	4.9
Subordinated loan capital	2.5	2.3	2.2
Equity	5.4	5.9	5.7
<b>Total equity and liabilities</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Memorandum:			
Total assets (NOK bn)	3 088	3 132	3 120

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

## Table 9 Balance sheet structure and profit/loss, covered bond mortgage companies<sup>1)</sup>

	2008	2009	Q3 09
<b>Balance sheet. Percentage distribution</b>			
Cash and deposits	3.6	3.2	4.2
Securities (current assets)	8.4	2.4	3.7
Gross lending	87.5	93.6	91.6
Loan loss provisions	0.0	0.0	0.0
Fixed assets and other assets	0.5	0.7	0.5
Total assets	100.0	100.0	100.0
<b>Notes and short-term paper debt</b>			
Notes and short-term paper debt	0.2	0.1	0.1
Bond debt	59.0	63.0	65.2
Loans	37.0	30.7	28.9
Other liabilities	0.1	1.1	0.7
Subordinated loan capital	0.7	0.6	0.6
Equity	2.9	4.5	4.5
Total equity and liabilities	100.0	100.0	100.0
<b>Profit/loss. Percentage of ATA (annualised)</b>			
Net interest income	0.77	0.98	1.04
Operating expenses	0.22	0.21	0.22
Losses on loans and guarantees	0.04	0.01	0.01
Pre-tax profit	0.77	0.45	0.40
<b>Memorandum:</b>			
Repayment loans (NOK bn)	220	396	357
Total assets (NOK bn)	359	594	550
of which Residential Mortgage Companies	359	560	530
of which Commercial Mortgage Companies	0	34	20

1) Mortgage companies with the right to issue covered bonds in accordance with the regulation that came into force on 1 June 2007. In December 2008, the figures are for eight companies, in December 2009 the figures are for 22 companies of which 17 are residential mortgage companies and in September 2009, the figures are for 18 companies of which 16 companies are residential mortgage companies

Source: Norges Bank

**Table 10** Stress testing<sup>1)</sup> bank losses and profits.  
Projections in stress scenario (baseline scenario<sup>2)</sup> in brackets)

	2010		2011		2012		2013	
<b>Macroeconomic scenario.</b> Percentage change from previous year unless otherwise stated								
Mainland GDP <sup>3)</sup>	0	(2¼)	¼	(2¾)	½	(2½)	1¾	(2¼)
CPI	2½	(2½)	1¼	(1¾)	1½	(2½)	1½	(2½)
Annual wage growth	3¾	(3¾)	3½	(4¼)	2¾	(4¾)	2¾	(4¾)
Registered unemployment (percentage of the labour force)	3	(3)	3¾	(3)	4	(2¾)	4¼	(2¾)
Real exchange rate (Import-weighted 44 countries)	91	(91)	92	(92)	93	(92)	93	(93)
Oil price, USD per barrel (level)	40	(80)	41	(84)	45	(86)	52	(86)
Bank lending rates (level)	4	(4)	3¾	(4¾)	3¾	(6)	4	(6½)
House prices	-4¼	(7½)	-13	(4)	-6½	(3)	-2	(3½)
Credit to households <sup>4)</sup>	4½	(7¾)	1½	(6¼)	3	(6¾)	2¾	(5¾)
Credit to non-financial corporations <sup>4)</sup>	-1¼	(0)	-¾	(3¾)	¼	(5½)	1¾	(6)
<b>Bank losses and profits</b>								
Problem loans households <sup>5)</sup> (percentage share of lending to the sector)	0.7	(0.6)	0.8	(0.5)	1.0	(0.5)	1.0	(0.5)
Problem loans non-financial enterprises <sup>5)</sup> (percentage share of lending to the sector)	6.0	(4.0)	7.9	(4.0)	9.5	(4.0)	7.7	(3.2)
Problem loans total <sup>5)</sup> (percentage share of gross lending)	2.4	(1.7)	2.9	(1.6)	3.5	(1.6)	3.0	(1.4)
Loan losses (percentage of gross lending)	1.6	(0.3)	2.1	(0.3)	2.5	(0.2)	2.2	(0.1)
Loan losses, incl. higher losses to shipping and the Baltic countries (percentage of gross lending)	2.0		2.4		2.9		2.5	
Post-tax results (percentage of average total assets)	-0.1	(0.6)	-0.5	(0.6)	-0.4	(0.6)	-0.4	(0.7)
Net interest income (percentage of average total assets)	1.0	(1.2)	1.0	(1.2)	0.9	(1.1)	1.0	(1.2)
Tier 1 capital (percentage of risk-weighted assets)	8.9	(9.4)	8.0	(9.4)	6.9	(9.4)	5.9	(9.4)
Regulatory capital (percentage of risk-weighted assets)	11.8	(12.2)	10.8	(12.3)	9.6	(12.3)	8.5	(12.4)

1) Further information and tables including previous stress test data in *Economic Bulletin 1/2010*

2) Norway's five largest banks and Nordea Bank Norge

3) Baseline scenario for CPI, annual wage growth, registered unemployment, oil price, real exchange rate and mainland GDP are from *Monetary Policy Report 1/2010*

4) Change in stock measured at end-year

5) Non-performing loans and other loans that banks regard as particularly doubtful. All banks excluding branches of foreign banks in Norway

Sources: Statistics Norway, Technical Reporting Committee on Income Settlements, Thomson Reuters, Association of Real Estate Agency Firms, ECON Pöyry, Finn.no, Association of Real Estate Agents and Norges Bank

## Table 11 Key figures

	Average 1987 – 1993	Average 1994 – 2008	2009	2010	Projections 2011 2012–2013	
<b>Households</b>						
Debt burden <sup>1)</sup>	141	145	193	197	200	206
Interest burden <sup>2)</sup>	9.7	5.8	5.1	4.9	5.7	7.4
Borrowing rate <sup>3)</sup> after tax	9.1	4.9	3.3	2.8	3.3	4.4
Real interest rate after tax <sup>4)</sup>	4.3	2.8	1.1	0.0	1.4	1.9
Net financial wealth <sup>5)</sup>	8	45	25			
Rise in house prices <sup>6)</sup>	-1.3	10.0	2.7	8	2	3
<b>Enterprises</b>						
Debt burden <sup>7)</sup>	1 087	874	642			
Interest burden <sup>8)</sup>	44	30	25			
Return on total assets <sup>9)</sup>	3	5	8			
Equity-to-assets ratio <sup>10)</sup>	27	36	42			
<b>Banks<sup>11)</sup></b>						
Profit/loss <sup>12)</sup>	-0.4	1.1	0.8			
Interest margin <sup>13)</sup>	5.2	2.9	2.4			
Non-performing loans <sup>14)</sup>		1.8	1.5			
Loan losses <sup>15)</sup>	2.3	0.2	0.4			
Lending growth <sup>16)</sup>	4.7	10.8	-7.7			
Return on equity <sup>17)</sup>		14.9	10.9			
Equity ratio <sup>18)</sup>		7.2	5.9			
Tier 1 capital ratio <sup>19)</sup>	6.3	9.4	10.5			

1) Loan debt as a percentage of disposable income adjusted for estimated reinvested share dividends for 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2012

2) Interest expenses after tax as a percentage of disposable income adjusted for estimated reinvested share dividends for 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2012 plus interest expenses

3) Banks' lending rates to households

4) Lending rates adjusted for inflation measured by the CPI

5) Households' total assets less total debt as a share of disposable income adjusted for estimated reinvested share dividends for 2000 – 2005 and redemption/reduction of equity capital for 2006 – 2012

6) Based on house prices from Association of Norwegian Real Estate Agents, Association of Real Estate Agency Firms, ECON Pöyry and Finn.no

7) Enterprises' total debt as a percentage of profits before tax and depreciation. Limited enterprises in Norway. Excluding bank/insurance, public sector and extraction of oil/gas. Figures include only enterprises with debt. Key figures for 2009 are based on a sample of financial statements that were submitted early and they represent around 5 per cent of all financial statements in 2009.

8) Enterprises' total interest costs as a percentage of profits before tax, interest costs and depreciation. Limited enterprises in Norway. Excluding bank/insurance, public sector and extraction of oil/gas. Figures include only enterprises with debt. Key figures for 2009 are based on a sample of financial statements that were submitted early and they represent around 5 per cent of all financial statements in 2009.

9) Enterprises' profits before tax as a percentage of total assets. Limited enterprises in Norway. Excluding bank/insurance, public sector and extraction of oil/gas. Key figures for 2009 are based on a sample of financial statements that were submitted early and they represent around 5 per cent of all financial statements in 2009.

10) Book equity as a percentage of total assets. Limited enterprises in Norway. Exclusive bank/insurance, public sector and extraction of oil/gas. Key figures for 2009 are based on a sample of financial statements that were submitted early and they represent around five per cent of all financial statements in 2009.

11) Annual accounts and stock at year-end form the statistical basis

12) 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

13) Percentage points. Average lending rate minus average deposit rate for all banks in Norway, based on stock at year-end

14) Non-performing loans as a percentage of gross lending to households, non-financial enterprises and municipalities

15) Loan losses as a percentage of gross lending to households, non-financial enterprises and municipalities for all Norwegian banks except branches of foreign banks in Norway and branches of Norwegian banks abroad

16) Per cent. Annual growth in lending to the corporate and retail market from all banks in Norway

17) Net 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 cannot be calculated due to insufficient data on equity

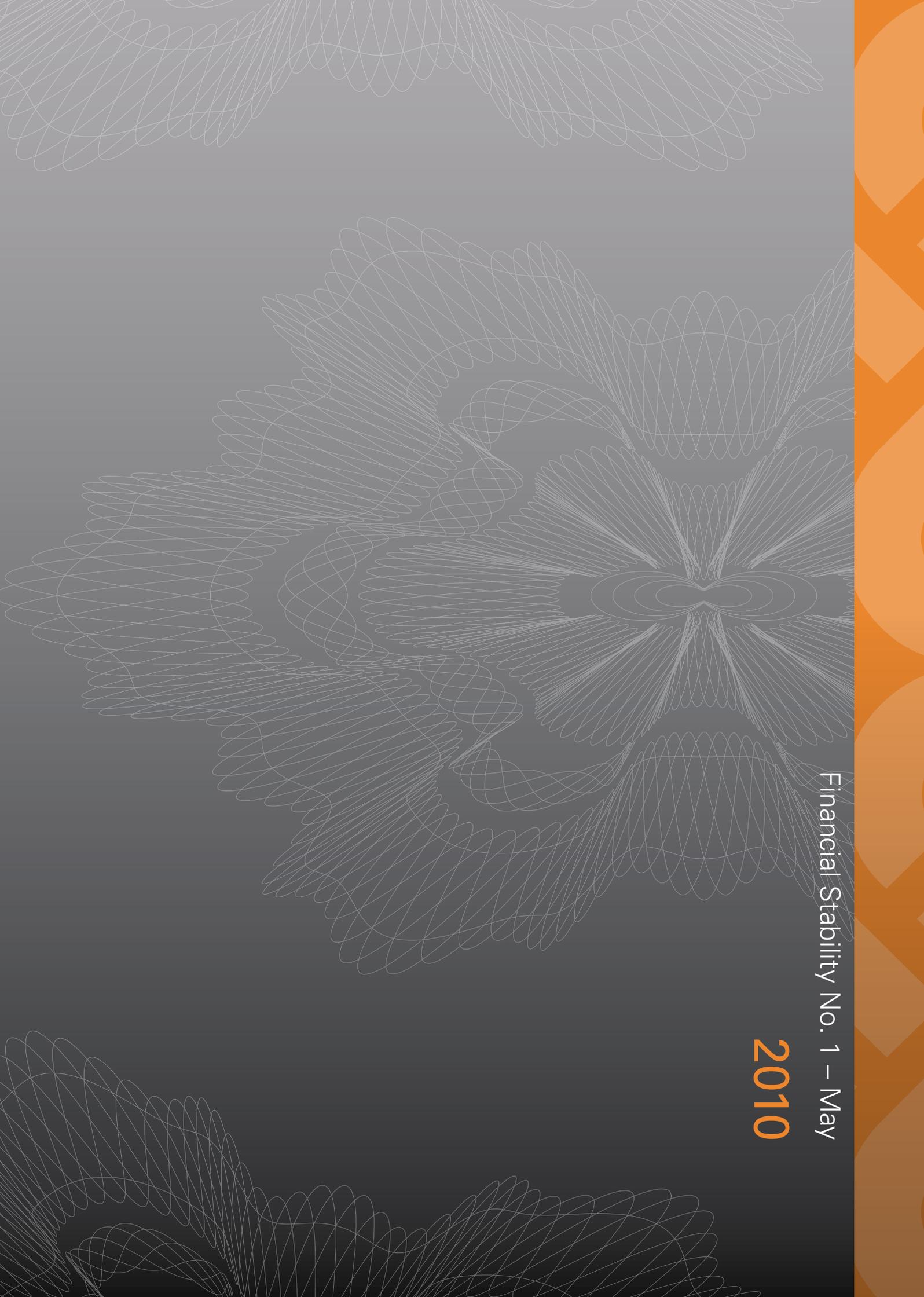
18) Equity as a percentage of assets for all Norwegian banks except branches of foreign banks in Norway

19) Regulatory Tier 1 capital to risk-weighted assets for all Norwegian banks except branches of foreign banks in Norway.

The average for the period 1987 – 1993 is for the years 1991 – 1993 due to lack of data

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





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